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THE COVER

The cover depicts *Junonia villida calybe*, the meadow argus butterfly. The illustration, which won third prize in the Student Colour section of the 1997 AES Scientific Illustration Competition, was prepared by **Justin Slevin** of the University of Newcastle.

MYRMECIA

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ADVERTISING RATES FOR MYRMECIA

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In addition, loose inserts and pamphlets supplied by the advertiser will be included in a mailout for $100 per item. The items should be of a size which will not project beyond the pages of *Myrmecia*. PLEASE NOTE: Inserts are no longer handled by the Editor. If you wish to include an insert in *Myrmecia* please contact Shirley Green of Blackwell Science (Asia). Contact details are on the back cover of this issue.

NOTICE

Statements made in *Myrmecia* do not necessarily represent the views of the Australian Entomological Society. Items printed herein should not be reproduced without permission of the author of the material.

COPY DEADLINE FOR NEXT ISSUE

Material for publication in the August 1998 issue of *Myrmecia* should be in the hands of the Editor at the address below by **Friday 24 July 1998**. Submission to fletchm@agric.nsw.gov.au is preferred but submission on IBM-compatible floppy disk in a major word processing format, or by fax, letter or carrier pigeon to the address below is acceptable.

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EXECUTIVE REPORT

MEETINGS

The Core Executive met on 4 February, 6 March, and 18 March 1997

NEW MEMBERS

Elected as Full Member:

Mr Bill CROWE, GPO Box 778, Spring Hill Qld 4001

Ms DeAnn GLENN, Institute for Horticultural Development, Private Bag 15, South Eastern Mail Centre, Vic 3176

Dr Nicholas JONSSON, 11 St David St, Kenmore

Qld 4069
Dr Alfie MEATS, School of Biological Sciences, University of Sydney, Sydney, NSW
Mr Jean-Louis SAGLIOCCO, CSIRO, European Laboratory Campus deBaillarguet, Montpellier, France 34980
Mark A. STANAWAY, Dept of Entomology, University of Queensland, St Lucia, Qld 4072
Yaw-Long YANG, No. 1 Ming-Shen E. Rd, Chi-Chi, Nan-Tou 552, R.O.C Taiwan

Elected as Retired Member:
John W. JASPERSON, 53 Port Curtis Road, Rockhampton, QLD 4700

Elected as Student Member:
Mr Chris PALMER, Dept of Entomology, The University of Queensland
Ms Linda THOMSON, School of Genetics, LaTrobe University
Mr Jeff SKEVINTON, Dept of Entomology, The University of Queensland
Ms Emma COTTAGE, Tamworth NSW

CHANGE OF ADDRESS, STATUS OR TITLE
Ian ALAN & Robyn V. JACKSON, 34 Brownhill St, Mundingburra, 4812 (QLD)
Elisha J. LADHAMS, Curtin University, Environmental Biology, GPO Box, U1987, Perth WA, 6845

RESIGNATIONS
Dr I Abbott, Como WA
Mr GP Davis, Lyons ACT
Mr MB Fletcher, Launceston TAS
Ms HA Janetzki, Samford QLD
Dr KA Lyonns, Ashgrove QLD
Ms S McGrath, St Lucia QLD
Dr FD Morgan, Norwood SA
Mr PB Du Guesclin, Colac VIC
Mrs AA Pound, Chermside QLD
Dr LA Whiffler, Alexander Heights WA

FROM MINUTES OF THE CORE EXECUTIVE

The executive notes with regret the death of Tom Browning.

Exclusions: The Executive has had extensive discussion about what to do about the 90 members (of a total of 773) who hadn't paid their dues for 2 years or more. Previous Executives (and this Executive in previous years) have been lax about demanding payment and excluding those who don't pay. However, given our contract with the new publisher requires payment for each member, we must insist that members pay their dues, resign or be excluded. Veronica Brancatini (VB) and Dave Walter (DW) will see what they can do to encourage those who have forgotten to pay, and to purge those who have left entomology or lost interest.

From the Vice President: Myron Zalucki (MZ) suggested that all student papers published, submitted or in press in the AJE by the end of July 1998 be considered for the Phil Carne Prize. DW, Heather Proctor (HP), Roger Kitching (RK), MZ and Peter Allsopp suggested as the judging committee for this prize. MZ suggested that we should check that the Phil Carne Prize is advertised in Myrmecia. HP notes that we should also check that the instructions to authors for the AJE request that students identify themselves as such.

Given the current uncertain financial position, the Executive agrees that all applicants for research grants for this year be turned back, and that an editorial explaining the current financial situation be published in Myrmecia. With any luck (and some response on the back payments), research grants can be re-established in 1999.

MZ suggested that the duties of maintaining the membership database be given to the Business Manager.

Order of Australia: MZ suggested that the society should nominate an entomologist for 1999.

From the President: RK presented his generic letter to past and potential Sustaining Associates of the AES. DW suggested that the letter should say that companies could sponsor one of the illustration/photographic prizes.

From the Treasurer: VB reports some good news - a cheque for $3,832 from the Melbourne AGM representing profits and return of float. Although the costs of the illustration contests need to be deducted from the 'profits', this was still excellent news and the Executive offers the Melbourne AGM committee a loud hurray!

From the Secretary: DW reported on a research grant report from **Terry Houston** on his search for rare spoon-winged lacewings; **Joe Friend**'s submission of a manuscript from NEEMPEACE and **Jennifer Harrison**, Editor of the Australian Dictionary of Biography, inquired about information on several entomologists, including **Allan May**.

New Council Members and Executive Appointments

Tony CLARKE, Representative Councillor (Qld)
David WALTER
Hon. Secretary

UNIVERSITY ENTOMOLOGISTS PLEASE NOTE

The first instalment of the List of Postgraduate Projects in Entomology currently being undertaken in Australian institutions appears in this issue of *Myrmecia*. However, many institutions have not yet sent in their details. Please send details of PhD, Masters and Honours projects to your local Regional Councillor who will then forward their list to me for final collation.

Details required are:

Name of Student
Project Title
Degree
Name of Department and Institution.

As only two instalments will be published, those not received by mid July will be left out.

Gary TAYLOR
gtaylor@waite.adelaide.edu.au

Obituary
Professor Tom Browning (1920-1998)

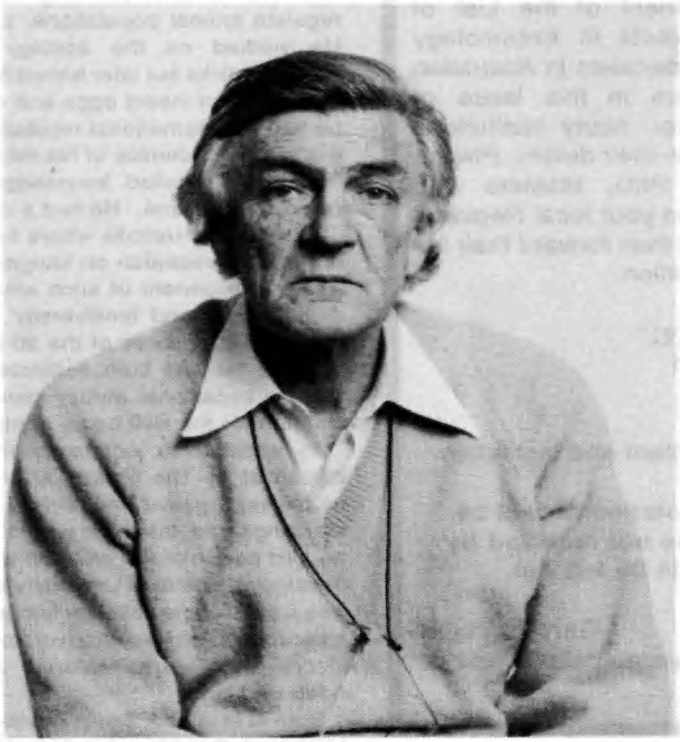
Imprisoned by the Japanese in Changi prison, Tom Browning survived World War II to become the first graduating PhD at The University of Adelaide and an eminent entomologist and ecologist. He was part of a quiet scientific revolution in the 1950's that saw Australia at the forefront in understanding the processes that regulate animal populations, particularly insects. He worked on the ecology of crickets and kangaroo ticks but later turned his attentions to the physiology of insect eggs and diapause for which he had an international reputation. However, like many top academics of his time, he possessed a broad but detailed knowledge of biology and science in general. He had a deep interest in the arid areas of Australia where he conducted much of his early research on kangaroo ticks, and was a strong exponent of such ideas as 'sustainable development' and 'biodiversity', long before these became buzz words of the 90's. As a university teacher, he was both dedicated and passionate and his occasional abrupt manner belied a deep concern for the well-being of his students.

In addition to academic life, he was also influential in The Peace Movement, vigorously protesting against the British nuclear tests at Maralinga and, later, the war in Vietnam. He was an avid patron of the arts and was instrumental in developing Adelaide University's art collection. He was a passionate collector himself and, later in life, an accomplished woodcarver, executing many fine pieces that were featured at exhibitions in Adelaide.

Born at Maitland, South Australia on January 28, 1920 and the son of a general practitioner, he moved to Sydney with his parents at the height of the depression in 1929. There he attended Kings School at Parramatta where he excelled at rugby, rowing and long distance running, as well as distinguishing himself academically. He enrolled for a BSc at the University of Sydney but did not complete the first year. Rather he enlisted in the Australian Infantry Forces and, with the rank of sergeant, was stationed in Singapore in 1940 with the 2/18 battalion. The battalion went up against the Japanese onslaught, fighting a rearguard action before the fall of Singapore and their capture soon after. His exceptional conduct during

this campaign was later mentioned in dispatches. Interned in Changi, he attempted to escape with several other men but unfortunately the small boat they stole sank. Making for shore he saved the life of a fellow escapee who could not swim. For some inexplicable reason, on being recaptured by Japanese soldiers, they were not shot, as was the standard fate for escapees.

At the end of the war he returned to Sydney in poor physical condition, weighing only six stone. However, within a few months he had become engaged to Janet Mary Goode, whom he married on Valentine's Day 1946, and had recommenced his studies at Sydney University. He graduated BSc in September 1948, then moved to Adelaide where he achieved first class honours in zoology, and was appointed to the position of entomologist at the Waite Agricultural Research Institute. Soon afterwards he enrolled in a PhD in zoology under the guidance of Professor H.G. Andrewartha and studied the ecology of the black field cricket (*Teleogryllus commodus*), an important agricultural pest in South Australia. Graduating in 1951, he was awarded a Nuffield Foundation Fellowship and spent a year at Cambridge University working with Professor V.B. Wigglesworth on water balance in insect eggs. He returned to Adelaide and took up a lecturing position in zoology. The following ten years were arguably one of the most stimulating periods for ecological research in Australia. The ecologist Charles Birch from Sydney University and the geneticist Michael White from the Australian National University were regular visitors to the Zoology Department at Adelaide where Andrewartha and Browning were avidly working on factors that regulate the size of animal populations, in particular insects. The theories they developed and the research on which it was based became the cornerstones of much of our present day understanding of animal ecology - how it is applied to the control of pest and feral animals and conservation of threatened and endangered species. His book, *Animal Populations*, was published in 1963.



Professor Tom Browning
1920-1998

During the 1950's he was an active anti-nuclear campaigner and his letters to newspapers protesting the British Maralinga tests earned him a personal visit by ASIO. He attended the Pugwash peace meetings in Canada and was a member of the Scientific Committee of 'The Peace Movement', representing them at meetings in Japan where he struck up a close friendship and long-term scientific collaboration with a number of Japanese scientists, particularly the entomologist Dr Sinzo

Masaki. In 1963 he was appointed to the Chair of Entomology at the Waite Agricultural Research Institute of Adelaide University, a position he held until retirement in 1983. During this time he was instrumental in expanding the Department, particularly the number of staff working on the population biology of insects. His research during these 20 years primarily focused on the physiology of insect eggs and diapause (using *Helicoverpa* as a model) but always with a view to providing a clearer ecological explanation for how insects cope with hazards of their environment.

He was a die-hard experimentalist, which was reflected in the fact that much of his latter work was published in the *Journal of Experimental Biology*. In pursuing this research he received numerous distinguished fellowships and visited universities in the USA, Japan, France and the UK. He was appointed Research Director (external) to the International Centre for Insect Physiology & Ecology in Nairobi (1971-77), where he guided work aimed at elucidating the ecology of insect pests in East Africa. In the latter part of the decade (1977-80) he was an influential member of the Australian Research Grants Committee (now the Australian Research Council). At the time of his retirement he was President of the Australian Entomological Society, and then chaired the Environment Protection Council of South Australia. Although he maintained a strong interest in science during retirement, much of his attention turned to other pursuits, particularly the arts and his love of woodcarving. Tom died in Adelaide on April 8, aged 78, after a long battle with throat cancer. He is survived by his wife Janet and children Denby and Anni.

There is no doubt that his scientific career was an influential one. His legacies are many but probably the most long-lasting is the generation of students he trained. Many are now highly placed in universities and government research organisations in Australia and have attained international recognition themselves. And all of this would never have happened if, one day, on a beach in Singapore the Japanese had decided to shoot a group of escaped prisoners.

Andrew AUSTIN
Crop Protection
The University of Adelaide

REGIONAL NEWS

AUSTRALIAN CAPITAL TERRITORY

CSIRO Division of Entomology

Ebbe Nielsen was in Washington, DC, 26 March-3 April to participate in the last round of the OECD Megascience Forum Working Group on Biological Informatics/ Biodiversity Informatics subgroup meeting. Ebbe Nielsen was again in the USA, participating in the Major Systematic Entomology Facilities meeting, New York, 16-17 April and the annual meeting of the US National Academy of Science, 25-28 April. **Rob Floyd** visited various Asian centres 9-20 March in connection with ACIAR projects. Rob worked on the 'Heartlands' project 15-16 April and was in Hobart for CRC-SPF activities on 28-29 April.

On 12 December 1997 the University of Hawaii Board of Regents awarded **Dr E.C Zimmerman** the Regents' Medal of Distinction, in recognition of Zimmie's scientific contributions and the impact this work has had on generations of students and researchers around the world. **Ian Naumann** has been kept busy with whitefly parasitoids and identifications, visited by **Andy Austin** from the University of Adelaide to discuss next year's meeting of the International Society of Hymenopterists.

Wendy Lee and **Ian Reid** databased more dung beetles at Mareeba; virtually all of **Ross Storey**'s (QDPI) collection is now databased, providing many additional data points for the BIOCLIM/DOMAIN modelling being undertaken by **Ian Reid** for the CRC-TREM project. **Chris Reid** continues apace in providing the beetle phylogenies against which the distributional data (actual and modelled) will be tested for biogeographic patterns. **Sophia Dimitriakis** and helpers opened up a pristine six metre long core from Lake Barrine sediments, extending back 9000 years. **Peter Cranston** has been nominated Adjunct Professor at the Australian National University. Peter accompanied **Don Edwards** on a flying visit to South Africa and Namibia to seek out target gondwanan chironomid taxa.

Dick Norris has completed his large manuscript on his new subfamily of Calliphoridae and it is near submission. **Erica Willis**, whose Brindabella streams are now dry, has started to analyse her data on emergence patterns. **Brendan McKie's** 1996-7 honours project on wood colonisation has

led to a first paper being accepted by Freshwater and Marine Research, and a second nears completion.

At the AGM and Award Presentations ceremony of the Australasian Sound Recordings Association (Inc) on 18 April 1998, **David Rentz** was presented with the Association's Award for Outstanding Contributions to Public Broadcasting and the Recording & Publication of Nature Sounds. David reports that his forthcoming third volume of the Monograph of Australian Tettigoniidae is progressing well. After finishing his History of the ANIC, **Murray Upton** has immediately joined forces with **Michael Braby** on the forthcoming butterfly book. **Robert Hoare** has finished his PhD thesis on Australian Nepticulidae. **Ian Common** has now written up half of the genera for the third and final volume of his major work on the Australian oecophorids. He visited Canberra 19 April - 3 May. **Marcus Matthews** and **Janelle Scown** spent ten days in and around Darwin collecting Heliothinae for the Biotechnology Program during March.

John Lawrence has finished the first draft of the 340 character 914 taxon matrix for *Beetles of the World.* **Tom Weir** is continuing taxonomic work on the difficult wingless dung beetle genus *Pseudignambia* from the Wet Tropics area. **Rolf Oberprieler** has just completed a manuscript on the "Systematics and evolution of the cycad-associated weevil genus *Apinotropis* Jordan (Coleoptera: Anthribidae)". **Bruce's Halliday**'s *Checklist and Bibliography of the Mites of Australia* is finished and has been sent to the publisher.

Under the guidance of **Graham Crompton**, the ANIC Volunteers Scheme is gradually taking shape. **Tom Van Gerwen**, the Volunteer Coordinator has commenced duties (Tel. 02.6246.4276; e-mail: volunteer@ento.csiro.au). **Kim Pullen** has been as busy as ever with the Identification Service. Kim and Graham have developed a telephone enquiry answering service, to free up some of Kim's time to pursue commercial customers and spread the word about the Identification Service. The ANIC now boasts an 'historic' display in the foyer, put together by **Graham Crompton**, **Chris Hunt** and **Murray Upton**.

Klaus and **Edith Sattler** have curated the ANIC gelechiid moths. Other recent visitors to the ANIC are **K.T. Park**, and **Tosio** and **Masako Kumata**. **Prof Yukimasa Kobayashi** (Tokyo Metropolitan University) is visiting the ANIC for six weeks to study the embryological development of primitive Lepidoptera. **Laurence Mound** has been host to the Italian thrips specialist, **Prof Rita Marullo**. **Brad Rence** has completed his stay in the ANIC, leaving with thousands of Black Field Cricket eggs to replenish his stocks in Appleton, Wisconsin.

Paul De Barro attended the South Pacific Quarantine meeting in Fiji during March and gave a successful presentation. Paul has also been talking to AQIS, QDPI, and the horticulture industry about managing the recent spiralling whitefly incursion in Cairns. In January **Denis Anderson** took delivery of 300,000 leafcutter bee cells *(Megachile rotundata)* from Canada, an introduction aimed at greatly increased seed production for lucerne growers. In late February and early March, thousands of adult bees were taken from quarantine and released onto lucerne near Deniliquin. **Geoff Baker**, now in Canberra, is working with his NSW Agriculture collaborators (particularly in Wagga) to establish earthworm surveys and field trials in the Southern Tablelands. **Bob Sutherst** ran the CLIMEX course in Canberra during April.

Ray Ackhurst spent a week in Indonesia and Brisbane at the end of February reviewing an ACIAR project developing a vaccine for the Old World screwworm fly. This is a collaborative undertaking between CSIRO Tropical Agriculture (Brisbane), the Research Institute of Veterinary Science (Bogor), and the Bandung Institute of Technology (Bandung). Ray presented an invited paper on Bt at the 14th Australasian Biotechnology Conference on 22nd April. **Cheryl Beard** joined the Bt project in January as a post-doc to work on the GRDC Northern Heliothis (= *Helicoverpa*) Initiative and **Constanza Angelucci** commenced a PhD project on binding sites of Bt toxins in *H. armigera*. **Mr Ma Jun**, Zhejiang Agricultural University, spent 7 weeks from February with **Richard Milner** looking at the pathogenicity of *Beauveria* to diamondback moth.

It has been some time since the last Stored Grain Laboratory and Termite Unit news. During the past months **Jonathan Banks** stepped down as Head of the Laboratory to be replaced by **Jane Wright** from 1 July 1997. Jane represented the Laboratory overseas at the Fumigants and Pheromones Technical Conference "Food Protection 98" in York, UK at the beginning of April. Jonathan continued his activities as co-Chair

of the Methyl Bromide Technical Options Committee (MBTOC) of the Montreal Protocol until early this year when he handed over to **Tom Batchelor** during February.

Stephen Beckett is working on heat disinfestation of stored product insects using "moderate" temperatures (42-55°C) and is also making a rig for similar studies at "high" temperatures. **David Rees** continues his study of psocids, especially *Liposcelis* spp., and their response to fumigation treatments. **Peter Annis** represented the Laboratory at Grains Week in Adelaide and now supervises research into new fumigants, active fumigation systems and controlled atmospheres. He is developing a CD-ROM information system for on-farm storage. Staff in the termite section have been preparing for forthcoming field trials in the NT. **Leigh Miller** submitted his thesis on the systematics of *Nasutitermes* and gained his doctorate. **Theo Evans** continued investigating the ecology and behaviour of wood eating termites and baiting techniques to control termites in horticultural and domestic situations. Theo is also involved in new work on physical and chemical barriers to termites in buildings.

Marcus MATTHEWS
Regional Councillor

NEW SOUTH WALES

Orange Agricultural Institute

Graham Thwaite hosted a large group of citrus entomologists from SE Asia (China, Korea, Malaysia, Thailand and Vietnam) who visited several centres in NSW in February. Although primarily interested in citrus, they wanted to see IPM in operation in orchards generally so Graham showed them what is happening in IPM in pome fruit orchards around Orange and Bilpin. The group was accompanied by **Andrew Beattie**, UWS Hawkesbury, who took the opportunity to catch up with former BCRI colleagues in Orange.

Several visitors have passed through the Scientific Collections Unit recently including **Mali Malipatil** looking at *Nysius* and other heteropterans, **Ian Wickham** from Narrabri to extract collection details for soldier beetles and a group from the Central Highlands Science Teachers' Association looking at ways in which the local science teachers can use the resources of the Unit for their teaching. In Sydney much of this educational interaction was supported by the University system and by the Australian Museum, but country centres don't normally have such facilities available locally. Local teachers see the arrival of the Scientific Collections Unit as a heaven-sent opportunity. We are keen to support this interaction but don't see ourselves as heaven-sent. Politician-sent would be more correct.

The Unit has also been popular for talks to local groups, including the Orange Field Naturalists and Conservation Society, Rotary, local schools, Orange National Field Days and the Institute itself. We have also been invited to be the guest exhibitor in Science at the Kinross Wolaroi School Open Day in November. Last year, guest exhibitor was Newcrest Lid, the owners of the Cadia Gold Mine, a huge development just outside Orange.

Monitoring programs continue with **Brad McNeil** and **Leigh Pilkington** keeping a keen eye on possible incursions of exotic fruit flies and **Matt Kerr** doing the Western Flower Thrips thing. With the possibility of WFT monitoring ending in the near future, Matt is also keeping his hand in on fruit flies as well as gearing up for a new round of monitoring leafhoppers in grapevines with **Murray Fletcher**.

Danuta Knihinicki continues her MSc work on Eriophyidae associated with native oil crops in NSW and is preparing for the International Congress of Acarology where she will present the major findings of this work.

Centre for Entomological Research and Insecticide Technology (CERIT) University of New South Wales

The 1998 CERIT guest lecture was presented by Professor **Gary Bennett**, Professor of Urban & Industrial Pest Management and Coordinator, Centre for Urban & Industrial Pest Management, Department of Entomology, Purdue University, on Monday 20 April, as part of the UNSW Biological Sciences seminar program. Gary's topic of "German cockroach management - progress and prospects" was well received by a sizeable audience including many industry visitors.

Preparation is well underway for the 1998 Industry Briefing Symposium CERIT staff are organising for Thursday 1 October. The Topic "Termite Management Today" should be of interest to industry, pest control operators and researchers. Specialists in a variety of fields are being invited to speak on the day. Letters of interest will be sent

out soon, to ensure your copy please contact CERIT, Biological Science, UNSW, Sydney 2052 or email CERIT@unsw.edu.au or Fax (02)9385 0346.

Nicole Honeyman has finished her short but productive stay at CERIT. Her skill with mosquitoes was much appreciated at a time when demand for them was high. We hope she enjoys her travels overseas before she begins studying at La Trobe University next year. Her help and friendliness will be missed!

Recent visitors to CERIT have included: **Vince O'Brien**, Termite Pty Ltd; **Annabel Duncan**, CSIRO Molecular Science; **Michael Gibian, Mickey Urosevic, Phil Ridley** and **Gavin Caine**, Reckitt & Colman Australasia; **James Walker**, AQIS; **Peter Willson**, Lower North Shore Pest Eradication; **Roger Sargent**, Shering-Plough Animal Health Ltd; **Gary Bennet**, Purdue University

Julie-Ann SHORT
CERIT

Department of Medical Entomology
University of Sydney/ICPMR
at Westmead Hospital

John Clancy, Stephen Doggett and **John Haniotis** are winding up what has been a very quiet NSW arbovirus surveillance and mosquito monitoring program this season. Thanks to El Niño, the State's mossie populations have been generally low, as has the arbovirus activity. However, the addition of seven areas within the Sydney metropolitan area to the program for the first time ensured everyone was kept on their toes. The guys were helped out during the season by three work experience students from Sydney University, **Natalie Garva, Ingar Wilknes** and **Thao Phung My Mai** whose help was certainly appreciated.

Merilyn Geary has been busy over the summer with mosquito surveys of Cumberland State Forest and contributing mosquitoes (*Culex annulirostris* and *Aedes aegypti*) to a pest control workshop in January. **Cameron Webb** and **Karen Willems** are continuing their investigations of mosquito populations in Homebush Bay, while dodging endless streams of trucks speeding to and from the various construction sites! Despite the generally low rainfall this season record numbers of the saltmarsh mosquito, *Aedes vigilax*, were collected during January and February. The population explosion prompted the Olympic Coordination Authority to undertake larvicide applications. Brisbane City Council made the big trip south to coordinate the aerial applications of VectoBac (*Bacillus thuringiensis israelensis*) which proved to be very successful. Karen has also been continuing investigations into potential alternatives to the mosquitofish, *Gambusia holbrooki*, for biological control in the frog ponds and has had success with the Pacific blue-eye, *Pseudomugil signifer*. This native species is considered relatively tadpole-friendly while still savouring the taste of mossie larvae. In entertainment news, **Stephen Doggett** has supplied a number of fully engorged ticks (*Ixodes holocycus*) to be used in the movie "Fifteen Amore", a story of love and loss set over the final years of WWII, so keep your eyes on the big screen! For those of you more interested in smaller screens, the Medical Entomology website:

http://www-personal.usyd.edu.au/~sdoccett/medical_entomology.htm

is up and running thanks to Stephen who has put a considerable amount of effort into it over the past few months. The site contains 70 pages of information on the department and its projects, mosquito keys, fact sheets on medically important insects and the diseases they can transmit, wetlands and travel bugs (a must for any traveller about to leave Australia's shores). **Richard Russell** and **Cameron Webb** travelled to the USA in October 97 for the 2nd International Congress of Vector Ecology held in Orlando, Florida, and contributed to the Symposium on Ecology of Australian Arboviruses which Richard had organised. Richard also had the honour of presenting a keynote address "Vectors vs humans in Australia - who is on top down under?"

All eight Australian presenters were well received and generated a great deal of interest in Australian arbovirus research. Following the conference Cameron travelled through California with **Mike Lindsay** (University of WA) and **Peter Ryan** (QIMR) to visit arbovirus research facilities and mosquito control districts, with a slight detour to Las Vegas to see the real USA.

In February, **Richard Russell** was invited to New Zealand with **Peter Whelan** (NT), **Brian Kay**, **Harry Standfast** and **Roy Durre** (Qld) as an adviser to the NZ Ministry of Health and to participate in a workshop on quarantine exclusion of exotic mosquitoes. In March, Richard travelled

to the USA again, this time to Sparks, Nevada, to present a paper on mosquito control arrangements at the Sydney Olympic Games development site. He has also been involved more recently with lecturing at a Workshop on Constructed Wetlands conducted by the University of Western Sydney, Hawkesbury.

Cameron WEBB
Regional Councillor

NORTHERN TERRITORY

I neglected to mention in the last NT report that a Christmas BBQ was held at the DPI&F for all entomology minded people in Darwin. Thirty-four people and a number of gate-crashing mosquitoes turned up which created a good deal of mirth at the expense of the medical ento's present. The Philippino Fruit Fly eradicators had their own BBQ but if they'd come as well the number would have trebled.

Department of Primary Industry and Fisheries
Quarantine Inspection Branch

Actual and possible exotic incursions continue to occupy much of **Ted Fenner**'s time. Although no *Bactrocera philippinensis* fruit flies have been found since Boxing Day (to mid-April), the consequences of the outbreak will be felt for many months to come via the conditions which must be met to send host produce interstate. More recently, a pest damaging date palm fruit was found in the Alice Springs area and was tentatively identified by a local mite specialist as the exotic Banks Grass Mite, *Oligonychus pratensis*. A tetranychid specialist in Brazil, however, does not think it is this species but possibly an undescribed native which has adapted to dates.

Ted also represented NT at the interstate quarantine meeting in Hobart at the beginning of April and had the not unmixed pleasure of seeing the year's first dusting of snow on Mt Wellington: at least downtown Hobart remained a little above freezing!

Weeds Biocontrol Branch

The Biocontrol team at DPIF is busy rearing/culturing and releasing/inoculating insect and pathogens on *Mimosa pigra*. **John Thorp** visited the Department and has taken the opportunity to take part in an aerial application of the pathogen *Phloeospora mimosaepigrae* at Wagait Aboriginal Reserve. Dr **Dang Vu Thi Thanh** arrived in February in Darwin to spend a week with **Bertie Hennecke** at DPIF. She came over as part of a training program for the mass production of *Phloeospora*, the mimosa pathogen.

Bertie Hennecke spent some time in Brisbane at CSIRO to take some new isolates of *Phloeospora* through Quarantine. He also discussed with **Wendy Forno, Leonie Wittenberg** and **Richard Chan** the production of the mimosa rust *Diabole cubensis*.

Entomology Branch
Exotic fruit fly eradication campaign.

All indications are that *Bactrocera philippinensis* has now been eradicated from the NT. The last fly was caught on 26 December 1997, only 36 days after the initial detection. A total of 82 adult flies were trapped. No *B. philippinensis* were reared from extensive collections of fruit. The last round of blocking using methyl eugenol impregnated blocks will be completed by late April. All areas will be deblocked by the 31st of May. The success of the eradication strategy was due to the thoroughness and hard work of **Stuart Smith, Mike Neal** and the teams that operated under their direction.

Heather Wallace has decided to wind down with a long holiday after winding up the fruit fly disinfestation project she has been working on of late. While **Deanna Chin** finalises the latest update to the recommended insect control manual, **Lanni Zhang** and **Haidee Brown** continue to plod along.

Rob Caudwell from the PNG Oil Palm Research Association visited the branch 22-24 April. Rob had discussions with **Graham Young** about sexava research and control.

Northern Australia Quarantine Strategy

Catching up on a back log of field trips has kept **Glenn Bellis** busy over the past few months. After a 10 day trip to Groote Eylandt and the east coast, he spent a week in Torres Strait catching Asian honey bees while **Tony Postle** filled in for him on a planned survey down the west coast of NT. A meeting of NAQS scientists in Darwin was held between this trip and a 2 week survey of west Timor, hot on the heels of **Graham Brown** and **Colin Wilson**. Glenn was initially a bit disappointed that the $150 worth of Rupiah he'd kept from his last Indonesian trip was now only worth $40 but the up side of the equation allowed

him to buy a pair of Reebok shoes for his wife (it seems that Indonesians don't routinely stock shoes suited to large Australian feet like his) for $11.

CSIRO Tropical Ecosystems Research Centre Invertebrate Laboratory

The invertebrate lab has been focussed on its field trip to the Victoria River District to sample along two gradients of increasing grazing intensity - one at Kidman Springs and the other near Kalkarindji, just north of the Tanami desert. **Ros Blanche** and **Tracey Churchill** led the gang and undertook litter sampling but they suspected that the clay soil cracks that had already started to form had lured many critters to their dark depths. The sweep samples, undertaken with majestic synchronicity (perhaps a new Commonwealth Games event?) by post-doc **Jerome Orgeas** and his wife **Catherine**, were more obviously productive. **Lyn Lowe** managed to hop faster than many orthopteroids, with some wonderfully camouflaged on the lateritic soils. The rest of the team, **Tony Hertog, Gus Wanganeen, Ben Hoffman** and **Nina Kurucz** augered many a pitfall hole, often with an audience of curious cattle that couldn't wait to try out the new obstacle course.

Back at the lab, **Kate Trumper** has joined the lab from the U.K. for a five month stay to study the introduced big headed ant *Pheidole megacephala*, as part of her PhD.

Jenni Webber has decided to give the unidentified salticids a break and head for Sydney to relish the Spider display at the Australian Museum.

Parks & Wildlife Commission NT Conservation Management Unit

Colin Wilson was accompanied on his recent trip around eastern Indonesia by the NT Museum's **Graham Brown**. The Lesser Sundas will now be known as the Torn Asunders. Colin was redistributing Siam weed gall flies from West Timor to other islands, and Graham was chasing wasps. Local lads enthusiastically joined in the chase until one caught a paper wasp in his bare hands. The payment of a consoling wad of rupiahs went some way towards averting a breakdown in diplomatic relations between our two great nations.

Territory Health Services Medical Entomology Branch

The Branch's great efforts on salt marsh mosquito control from November to February have been vindicated by significant reductions in the numbers of confirmed cases of Ross River virus disease. There were only 43 cases in the Darwin region from January to March this year compared to 48 last year, with last year a relatively good year when compared to some recent years.

The Katherine flood produced another challenge to the Branch in January and February, with flood waters remaining around and breeding large numbers of *Culex annulirostris* in the sewage contaminated water. **Peter Whelan, Gwenda Hayes, Ross Nowland** and **Jane Carter** combined with regional environmental Health officers and the Defence forces to survey and demark areas for aerial control. The aerial control operations were very efficient with complete control over large areas of remnant pools within two kilometres of the town. Mosquito numbers were relatively low for four weeks after the flood and Ross River cases have been lower than last year with only two in February compared to eleven in the same month the previous year.

The sero conversion of a sentinel chicken in Katherine to MVE in March has also highlighted the need for effective mosquito control in that area. **Ross Nowland** and **Jane Carter** completed an *Aedes aegypti* search to the Queensland border in February and are busy confirming that the NT is still free of the dengue mosquito.

Gwenda Hayes is still full on organising a database for all the Branch's activities, in between maintaining the monitoring and control operations.

Peter Whelan, along with **Richard Russel, Brian Kay, Harry Standfast** and **Roy Durre**, assisted the Ministry of Health in New Zealand in late February/early March, with a workshop to discuss preventing exotic mosquito establishment. Peter also attended the inaugural mosquito control group in Tennant Creek in April and his visit coincided with the first rain in three months. That made it a lot easier to remind locals of the potential of mosquitoes in an arid area.

Brian Montgomery has been on holidays and is now back into the planning process to prevent new mosquito breeding sites, including setting up a mosquito monitoring program for the proposed Jabiluka mine in Kakadu.

Visitors to the Branch included **Professor Yamanishi** and **Dr Yamaguchi** from Kobe in Japan to look at our mosquitoes and tabanids.

Museums and Art Galleries of the NT

Graham Brown spent two weeks in eastern Indonesia collecting wasps in the company of **Colin Wilson**. Colin proved to be a good tour guide in introducing Graham to karaoke Indonesian style, Merparti airlines and local taxi drivers. Merparti lived up to its reputation of taking passengers to exotic places and then stranding them there, while every single taxi driver tested demonstrated his ability to drive "safely" at high speeds on overcrowded streets (in a fashion that would see them gaoled for life in Australia) without the use of gears (unless absolutely necessary) and brakes (very rarely).

Graham was thankful of Colin's 6ft 6 inch height (it sounds better in real units) which precluded him from sitting anywhere else other than the front (ie death seat). Colin drove with his eyes shut (as, it is believed, did the taxi drivers), and both are still recovering.

Glenn BELLIS
Regional Councillor

SOUTH AUSTRALIA

We are saddened by the recent death of **Tom Browning**, noted ecologist and insect physiologist; Waite Professor of Entomology, 1963-1983, and former Head of Department of Entomology at the Waite Agricultural Research Institute; foundation member of the Australian Entomological Society, inaugural Regional Councillor for South Australia, and Society President, 1982-1983. An obituary appears in this issue.

Department of Crop Protection
The University of Adelaide

Steve Goodwin visited in January and discussed his work on Western flower thrips with members of the Department and the SARDI Entomology Unit. **John Weiss** (Keith Turnbull Research Institute) visited in March to see **Craig Clarke**'s work on horehound plume moth and discussed biocontrol of horehound with the group. **Nancy Schellhorn** (University of Minnesota) visited in March to discuss community level interactions among natural enemies in biological control. **Owain Edwards** (CSIRO Entomology, Perth) presented a seminar in March on interactions between the parasitic wasp *Macrocentrus grandii* and European corn borer while en route to his new position in Perth. Congratulations to **Uli Theopold** who was successful in obtaining an Australian Research Fellowship for 5 years to work on "A molecular genetic approach of cell regulation by *Drosophila* cell surface mucins". **Sassan Asgari** was awarded the Promega prize for his PhD work and gave an award lecture at the Genome conference in Lorne. **Dirk Thomsen** has completed his experiments on patch time allocation by *Cotesia rubecula* and has returned to Germany to complete his masters thesis at the University of Hanover. **Daniel Breustedt** from Freiburg, Germany, is visiting **Otto Schmidt**'s lab. for 3 months to work on molecular techniques used in invertebrate research. **Andy Austin** visited **Andy Beattie**'s group at Macquarie University in April to discuss aspects of Invertebrate Biodiversity research. New research students to the Department include **Dawn Hawthorn-Jackson** (Honours) and **Jeanine Baker** (PhD), both of whom are working on horehound plume moth, and **Gitta Seikmann** (PhD) who will study the foraging behaviour of the parasitic wasp *Cotesia rubecula*. A new four-year undergraduate degree, the Bachelor of Agricultural Science (Integrated Pest Management) has been approved for introduction at the University of Adelaide in 1999. The course will broadly cover IPM of insects, nematodes, plant diseases, weeds and vertebrates but students will be able to tailor their training to specialise on management of selected taxa of pests. The degree program will have a strong scientific foundation and will incorporate training in the principles and practices of IPM. An important part of the course is the practical internship which involves students working in the field with IPM practitioners. Anyone interested in the new degree should contact **Mike Keller**.

Entomology Unit, SARDI.

An ACIAR-sponsored entourage of 20 citrus entomologists from Thailand, Vietnam, the Philippines, China and South Korea visited the Waite campus in February. **Andrew Green, Greg Baker** and **Peter Taverner** spoke to the group about citrus IPM in South Australia and post harvest disinfestation. Tour management was provided by **Andrew Beattie** and **Debbie Rae** (University of Western Sydney).

University Of South Australia
Mosquito Research Group

Since last reporting, the mosquito group has

gone ahead in leaps and bounds. We have been hard at it doing surveys of mosquitoes in and around Adelaide. Our city, being the Wetland Capital of Australia, gives local government mozzie concerns. It's a strange thing that residents will inevitably point to the local wetland as the source of their mosquito problems while their back gardens are seething with wrigglers. In some cases we are confronted with features of old-style town planning which are irreversible and provide wonderful mosquito habitat (drains, open sewers etc). Newly enrolled for a PhD is **Jo-Anne Kent** who will work on mosquito biochemistry and genetics. **Craig Williams** is well underway with his work on the genetics of host-seeking behaviour in *Culex annulirostris*. **Terry Fessas** is just finishing off his Honours on oviposition behaviour of *Culex quinquefasciatus*. **Kate Gilbert**, our Graduate Research officer, has brought a wonderful new dimension into the study of mosquitoes giving ideas a botanical slant. In June we have two new Honours students starting projects on: mosquito nectar feeding, and humidity as related to mosquito roosting sites.

SA Water Australian Water Quality Centre

At the Australian Water Quality Centre the Monitoring River Health Program continues into 1998 and the recent good rains in South Australia should ensure that the creeks have good conditions this autumn. Another 200 new sites around the state will be sampled with the highlight this year, a visit to the north-east corner of SA to sample the Diamantina and Warburton systems. New people have been enlisted for the project with **Daria Schulze** and **Tracy Venus** joining **Paul McEvoy, Vlad Tsymbal** and **Chris Madden**. **Rob Walsh** has also begun work at the centre this year with **Peter Schultz** and hopes to get time to indulge his passion for zooplankton between sorting macroinvertebrates. Taxonomic advances continue with the recent Taxonomic Workshop in Albury in February providing us with keys to water mites to family level. Aquatic worms are now being identified to family and even genus after years of calling them "Oligochaeta".

Gary TAYLOR and Paul DANGERFIELD
Regional Councillors

VICTORIA

Institute for Horticultural Development, Agriculture Victoria, Knoxfield

Gordon Berg, **Peter Merriman**, **Mark Smith** and **Bernie Swanson** organised a successful national workshop on approval of pesticides for minor use at IHD on 23/24 March.

The workshop was funded by the Australian Vegetable Growers organisation (Ausveg), the Horticultural Research and Development Corporation (HRDC) and the Rural Industries Research and Development Corporation (RIRDC). The workshop examined overseas programs and syndicate sessions formulated recommendations for an Australian program.

Peter Chapman, of the Pesticides Safety Directorate, and **Martin McPherson**, of Horticultural Research International, explained the United Kingdom situation and described the operation of their Specific Off-Label Approval (SOLA) scheme. **Rick Melnicoe**, Western Region Co-ordinator of the IR-4 Program and the Pesticide Impact Assessment Program based at the University of California, Davis, dealt with the United States model.

More than 50 delegates representing the vegetable industry in all States, other horticultural industries, agricultural chemical manufacturers, consultants and resellers, various government agencies and research corporations gave overwhelming support to the development of a national program for the approval of minor use chemicals in horticulture.

It is hoped that the workshop outcomes will provide a platform for launching a national minor use chemical program for horticulture.

On 11 February **Peter Williams** met with a parliamentary delegation concerned with facilitating exports. The meeting was at Ausflora Pacific, Gembrook where Peter has conducted experiments on phosphine fumigation for disinfestation of cut flowers for export. Fumigation schedules developed are being used commercially at Ausflora Pacific.

Peter Williams also represented IHD at the HRDC Annual Disinfestation Researchers Meeting held at DPI in Cairns in March.

David Williams reports that Painted Apple Moth has shown up in several orchards this year, either as a result of the drought or the reduced amount of insecticides now being used.

Cathy Mansfield is in the final throes of writing her MSc thesis on host location and population dynamics of the potato moth. **Alison Medhurst** is continuing her involvement in the National Glasshouse IPM project. Apart from her regular crop monitoring, she is coordinating the production of pest and disease identification cards for a range of glasshouse crops. In their spare time, Cathy and Alison continue to monitor sticky traps as a part of the Western Flower Thrips accreditation program.

Violeta Traicevski is now working at IHD with **Jane Moran** and **Peter Ridland** on an HRDC project investigating management of celery mosaic potyvirus which is causing concern to growers in the Cranbourne area. As well as wrestling with ELISA diagnostics, she is monitoring aphid populations at two sites.

Peter Ridland visited Gatton and Hangzhou, China as part of the final review of the ACIAR project "Improvement of Integrated Pest Management of *Brassica* Vegetable Crops in China and Australia".

Peter Hughes (QDPI) recently presented his spray application roadshow to *Brassica* growers in Werribee and Cranbourne as part of the HRDC funded project "Advancing the integrated management of diamondback moth in crucifer vegetables". Both nights were enthusiastically received by growers. UV fluorescent dye was sprayed on the crop and growers were able to assess the spray coverage using UV lights during the evening.

John Curtis was farewelled this month (with his PhD thesis almost completed). He has taken up a 2 year position with **Tony Shelton** and **John Vandenburg** at Cornell (Geneva). He will be working on control of thrips on cabbages using a combination of microbial control, primarily *Beauveria bassiana*, and cabbage host plant resistance. He can now be contacted at jec30@nysaes.cornell.edu.

Siva Subramaniam has been working with **Peter Ridland** and **Nancy Endersby** monitoring sweet corn crops for *Helicoverpa armigera* as part of the National HRDC Project on insect pest management in sweet corn. He has now moved to Bairnsdale where he will continue his work in this project. Subra came to us from **Steve Wratten**'s group at Lincoln where he completed his PhD on the management of carrot rust fly.

DeAnn Glenn and **Mali Malipatil** were in Mildura recently for a review meeting for Australian Grapevine Yellows. They are screening potential insect vectors of this phytoplasma in grapevines.

Mali was delighted to host a visit by his lygaeid specialist colleague, **Merrill Sweet** (Texas A&M Uni) and his assistant, Ixel, during 13-17 March 1998. Together they discussed various aspects of lygaeid systematics and did some collecting, particularly in the Otway Ranges where Merrill was specifically looking for Henicocorinae specimens for his molecular systematic studies.

IPM Technologies Pty. Ltd.

Paul Horne and **Cindy Edward** have finished a very hectic time monitoring potato crops and vineyards, and are catching up on laboratory work. **Dan Papacek** and **Karel Bolkmans** (Koppert) visited IPM Technologies lab. to discuss biological control in field crops. They were here for a couple of days when it happened to be over 40 degrees and they left knowing Melbourne was far hotter than Queensland.

Nancy ENDERSBY and Robyn COY
Regional Councillors

WESTERN AUSTRALIA

Agriculture Western Australia

Rob Emery entered the Australasian Farm Software competition in Sydney in March to demonstrate the Agriculture Western Australia Insect Collection Database and the Australian Grain Insect Resistance Database. We didn't win anything but both programs created a lot of interest which was reported in "The Australian" newspaper.

The volunteer program for entering specimen information in our Insect Collection Database is underway and **Bengt Thaung** is a regular visitor who has made a valuable contribution both databasing and scanning specimen images.

Debbie Thackray is back in the AgWA fold after seven months of compulsory enjoyment travelling around Australia in a rusty campervan. Well it's one way of getting to see a lot of quarantine stations! She has settled back into her work on modelling and forecasting aphids and virus epidemics in lupins and cereals and is looking forward to attending the Brisbane conferences in the Spring.

Rick Roush, new director of the Weeds CRC in Adelaide visited WA twice in April and squeezed in a discussion on DBM resistance management with

Françoise Berlandier. On the second visit he also gave a seminar on the benefits of keeping pests out of Australia, focussing on *Bemisia* (Silverleaf whitefly).

CSIRO Division of Entomology, Floreat Park

Planning has commenced for the 7th Australian Conference on Grasslands Invertebrate Ecology, to be held in Perth in September 1999, most probably in the University Common week of 27th September – 1 October. This coincides with the magnificent wildflower season for which WA is famous. Thanks to **John Matthiessen**, a committee comprising staff from CSIRO, Agriculture WA, the University of Western Australia and Curtin University was formed in April 1998 to begin the momentous task of organising the conference. We expect to have the first circular out by the end of May, so look out for it!

Owain Edwards, formerly of the USDA has commenced at CSIRO in Floreat Park and will work on various aspects of aphid ecology in Western Australia. He is a welcome addition to the dwindling number of aphidologists in Australia!

School of Environmental Biology
Curtin University of Technology

Life has just returned to normality in the Entomology Laboratory after it was gutted to install air conditioning and a fume-extracting chemical cupboard. **Jonathan Majer** was happy to escape the turmoil as he was on leave in Brazil. Whilst there he spent two weeks at the Cocoa Research Institute (CEPLAC) with **Jacques Delabie** working on the survival of arboreal rainforest ants on trees which have been isolated by agricultural clearing. He also had the opportunity to meet **Donat Agosti** (American Museum of Natural History) to discuss progress with the book they are co-editing and which is to be titled "Measuring and monitoring biodiversity: standard methods for ground-living ants".

Prof Tae Woong Bae of Dong-A University, Korea is currently visiting the laboratory and is cooperating on the project concerning impact of fragmentation on eucalypt canopy arthropods. Prof Bae is identifying and analysing the Coleoptera material. The canopy work is soon to be extended to the bark arthropods as **Jonathan Majer** and **Harry Recher** (Edith Cowan University) have secured three-year funding to investigate this in the jarrah forest and wandoo woodland.

Zoology Department
University of Western Australia

Ian Dadour and **David Cook** (AgWA) will add Forensic Entomology to their portfolio as they have recently been granted $24,740 by the National Institute of Forensic Science Australia to work on "Seasonal succession and thermal detection of insects on pig carcasses with special reference to the black carrion fly".

Françoise BERLANDIER
Regional Councillor

OVERSEAS NEWS

PAPUA NEW GUINEA

Due to severe drought conditions, the entomological scene has been pretty quiet. However, the dynastid and weevil pests have continued to be major limiting factors to the development of the coconut industry in Papua New Guinea. The PNG Cocoa and Coconut Research Institute in East New Britain has decided to revitalise its entomological team. Applications from Economic Entomologists with expertise in insect trapping methods, pheromones, insect pathogens and field trial work have been sought internationally. The intention is to produce practical, cost effective integrated control recommendations suited to low management input farming systems.

The University of Papua New Guinea, due to daily six hour day time electricity blackout, commenced teaching 1½ months late after the generators had arrived. During the last two years some 20 degree holders with specialisation in Entomology have rolled out. Severe financial problems with the ever sliding national currency and never-ending law and order problems are making the expatriate staff wonder whether it is all worth it.

Ray KUMAR
Overseas Correspondent PNG.

FASTS NEWS

(Federation of Australian Scientific and Technological Societies)

March News

University Science: Crisis or Crossroads?

The one-day Forum at the National Press Club has left FASTS with an interesting question - where to now? We have put together a potentially powerful coalition with concerns over science in the universities. Most Australians would be aware that all is not well in University science, which has been something of a running sore in the media.

The Australian Vice-Chancellors' Committee, the Council of Deans of Science and the National Tertiary Union are groups that one would expect to stand up for university science. It's good to see other groups joining in to express their concerns - the Minerals Council of Australia, the Australian Chamber of Commerce and Industry, and the Business/Higher Education Round Table (BHERT). FASTS is keenly aware of the need to build an alliance which spreads beyond the groups and individuals with a direct interest in the outcomes.

This is a key issue, and one which was emphasised at the closing session of the Forum by both Chief Scientist **John Stocker** and **Ashley Goldsworthy** of BHERT.

This "Science Alliance" is necessary if S&T is to be a serious election issue in Australia. If commerce, mining and farming interests stand up in public and say a properly-funded S&T section is essential for national well-being, then it becomes harder for the will and the rhetoric of political parties to evaporate especially under the increased pressure of an election.

Launch of Policy Document 1998

The third edition of the FASTS' Policy Document was formally launched at the Forum, and has been sent to key figures in Parliament and the bureaucracy.

In my informal speech at the National Press Club, I asked whether Australia can achieve its vision for the future by priming the science pump and letting the good times roll.

The answer is No. We are going to have to be much smarter about where and how we invest our limited resources to produce the sort of high technology companies that can set prices which command a premium for smart ideas. The Policy Document points the way.

One thousand copies of the third edition were printed, and 300 advance copies distributed to our Member Societies prior to the launch. It was another proof of Murphy's Law that the handful that were incorrectly collated had to be the ones taken along to the launch. Replacement copies are being mailed out by an apologetic printer.

PM's Science, Engineering and Innovation Council

PMSEIC members seeking to identify priority issues for Australia held their first sub-committee meeting in February. I invited FASTS' Member Societies to contribute their ideas on priorities for Australia. Their responses will be of material assistance in shaping the considerations of this sub-committee, and I thank Members for their thoughtful contributions.

Health and Medical Research Strategic Review

The Commonwealth Government has commissioned **Peter Wills** to conduct a review on the future role of health and medical research in Australia up to the year 2010.

Professor **David Tracey**, Board Member for Medical Sciences, will help coordinate a submission from FASTS to this broad-ranging and important review. Closing date for submissions was April 20. An information pack about the Review is available from **Maureen Cruze** on (02) 6289 7179, or from the internet at:
http://www.health.gov.au/notices/hmstratr.htm

New Vice-President

Congratulations to Professor **Bob Carter** on his election to the position of FASTS' Vice-President. Bob is in the School of Earth Sciences at James Cook University in Townsville. He replaces Dr **Geoff Hudson** who retains his position as Board Member representing Geological Sciences.

New Members

FASTS continues to attract new Member Societies, with the latest being the Australian and New Zealand Society for Laboratory Animal Science (ANZLAS). Publicity surrounding the November Council meeting, the release of the Ten Top issues, the Forum and the release of the FASTS' Policy Document have generated a steady stream of inquiries.

FASTS can now be confident it has steered

away from the rocky shores of three or four years ago, prior to the release of its first policy document, but we cannot be complacent. We are looking to increasing our impact on S&T policy making, and the Executive is currently considering a draft business plan.

House of Representatives Inquiry

In the last Circular I mentioned that FASTS had made a submission to the H. of R. Committee examining the effects on R&D of public policy reform in the past decade. We have now been invited to appear before the Committee next month. The FASTS' delegation will be led by **Ken Baldwin**, as Chair of the FASTS' Policy Committee. **Chris Easton** and **Joe Baker** who coordinated the response from FASTS to this Inquiry will both be overseas during the hearings.

Science NOW!

There has been steady progress on establishing a governing body to run the new media-focussed science forum, and I have met with the Presidents (or representatives) of the two science academies, the Science Communicators and ANZAAS to set down broad guidelines.

We hope to have the structure in place shortly. In the meantime, the first Forum in Melbourne in Science Week (May 7 to 10) is proceeding apace.

Member Societies were recently invited to submit the names of people who presented the most interesting papers at their last conference, so the papers could be given a public airing. This invitation is attracting huge interest. For details, contact Niall Byrne on 03 5253 1391, mob. 0417 131 977 or by email: niall@aahl.dah.csiro.au

ANZAAS

It's good to see three women on the new-look ANZAAS Council, more than ever before in its 110 year history. We wish ANZAAS and new President **Paul Adam** well in their endeavours to find a new path.

Peter CULLEN
President, FASTS
14 March 1998

ELECTRONIC NEWS

Web site on chalcid parasitic wasps (Hymenoptera: Chalcidoidea)
http://res.agr.ca/ecorc/apss/chalhome.htm

The chalcid site is part of the Animal Protection Systematics Study APSS web site of Agriculture and Agri-Food Canada.

The chalcid site consists of general information about chalcids in "About Chalcid Wasps". Information is organised under the headings: introduction, economic importance, biological diversity, recognition, monophyly and relationships, family classification, recognised families and major taxonomic resources, regional keys to families, catalogues, and references.

A major part of the chalcid site includes an interactive, illustrated glossary of over 600 morphological terms that have been used to describe chalcid structure in the literature. Almost all terms are illustrated by at least one line drawing or scanning electron micrograph. The structures indicated on each illustration have the terms linked back to the glossary definitions so that you can go back and forth between illustrations and different terms. Similarly, within definitions, any specialised term used as part of the definition is linked to its own definition.

Because the chalcid site forms part of a site dedicated to biocontrol of filth flies there is also information on chalcid parasites of filth flies, including a list of the 29 chalcid species in 13 genera reported to parasitise filth flies in North America. An example couplet of a key that will eventually form part of the site is also included, as is one example *Fact Sheet* for a species. There is also a bibliography of about 1,000 papers dealing on some aspect of the taxonomy or biology of the 29 species, which is searchable (see introduction to the bibliography). The bibliography is yet far from complete but is a start.

Finally, if you check out the site please have a look at "How Can You Help?" Hope you find the site interesting.

Gary GIBSON
Agriculture Canada
Email: GIBSONG@EM.AGR.CA

Digital Taxonomy Home Page

This is to announce the release of the Digital Taxonomy home page, a resource for biodiversity data management "tips and techniques".

Digital Taxonomy is an attempt to present a wide-ranging resource of information for biodiversity data management in the World Wide Web. The page provides a number of links on software, methodologies, standards for data

exchange, and information sources related to biodiversity data management, with emphasis on the exchange of *free* scientific software tools (preferably those including source code), computer techniques, and software developers' Internet addresses.

The page intends to be not a mere collection of links but a place for the exchange of useful tools for the developer of biodiversity software and not only for the user of such software. So, I have tried to include as possible direct links to software packages (especially those including full source code) and relevant documents, but some of the linked pages point to other pages containing further documents and software.

For DELTA users, Digital Taxonomy will become a comprehensive source of links to software and documentation, pointing to programs and documents not included in the official DELTA Software home page (eg. Pankhurst's programs PANKEY and DEDIT). I have also included a document by Richard Pankhurst describing the differences between CONFOR and PANKEY and have made available the beta-test version of my DELCODE program, an experimental Windows editor for DELTA.

There are also links for software useful in morphometrics and ecological research, some of them not found elsewhere (as my program for Wright-style path analysis and my own implementation of a program to compute population estimates using Jolly's method). In the near future, I hope to add more links to molecular biology stuff (especially support libraries including full source code).

Last, but I hope not least, there is a section providing links to DELTA and morphometric datasets, as well as access to both biodiversity-specific (MUSEServer, GenBank, LegumeWEB, etc.) and general purpose (AltaVista, Yahoo, etc.) search engines (this uses a simple Java applet I've written and so you'll need a Java-powered browser to run queries using the general-purpose search engines).

The URL for the Digital Taxonomy page is:
http://www.geocities.com/RainForest/Vines/8695

The Digital Taxonomy page is still under construction and I want to get some feedback from users.

Prof. Mauro J. Cavalcanti
BRAZIL
Email: maurobio@uerj.br

Hymenoptera On-Line Database

We'd like to invite you to drop in and take a look at our new "Hymenoptera On-Line Database"

http://iris.biosci.ohio-state.edu/hymenoptera

This is the web access page to our "Mopsus Database", a relational database system that stores information on specimens, classification, taxonomy, biological associations, and images. The database is an outgrowth of our "Pelecinus Project", the goal of which was to build the database and software tools to manage and present all the data related to one taxon.

Hymenoptera On-Line offers information on:

1. Classification
2. Taxonomic literature
3. Images
4. On -the -fly distribution mapping
5. Biological associations
6. Access to external databases

For a quick look at the section of the database that has received most of our attention for the past year, try beginning with the family Pelecinidae. Other sections that are fairly well-populated with data on names and literature are the Proctotrupoidea, Platygastroidea, and Ceraphronoidea. To see how the biological associations and external database functions work, try looking at the genus *Sparasion* (Scelionidae) and follow it through. We have locality data for a number of taxa, particularly in the Stephanidae, Monomachidae, and the genus *Acanthoscelio* (again, a scelionid).

Obviously, the magnitude of this project exceeds the capabilities of our group alone. We invite and earnestly desire your contributions and assistance in building this community resource. Our own priorities at this time are to:

1. continue to gather and input names of valid taxa: at the moment the database contains the names of 31,606 valid species; 4,142 valid genera; and a total of 46,881 names at all levels.

2. enter data from specimens as vouchers of distribution and biological associations (host, prey, pollen, etc.): we now have 19,739 specimens with data stored.

3. gather systematic and biological data from the literature (the database is designed to be able to handle both specimens and unvouchered records such as observations, label data and literature records): there are only 1,905 publications in so far.

4. images: the web is a visual creature and

images, sounds, even movies can be included. This is a black hole begging for the input of matter!

So, please, check out the site and send us feedback. We welcome any assistance in data gathering and all contributors are credited.

STEPHANIDAE HOMEPAGE
http://iris.biosci.ohio-state.edu/projects/stephanids

The page was optimised for NETSCAPE v. 2.02, and you will find some things out of format if using earlier versions. Please be also aware that many parts are still unfinished.

While there, please make sure you will not miss the following:

1. A new way of presenting morphometric data. Path: [Ongoing Projects]->[Revision of the Genus *Hemistephanus*]->[Material and Methods]

2. A method specific for collecting stephanids, under [Collecting Stephanids]

I would greatly appreciate receiving your suggestions and commentaries about the site from eventual misspellings to other subjects you would like (or expect) to see in a site like that. Please send messages directly to

aguiar.2@osu.edu

Alexandre Pires AGUIAR
The Ohio State University
Museum of Biological Diversity

COMING EVENTS

"Termite Management Today: 1998 CERIT Industry Briefing Symposium"

Thursday 1 October.
University of New South Wales
Sydney, Australia.

Termite Management Technology is a rapidly growing and changing field with its own problems and controversies. To help industry, researchers and consumers to stay in touch with current issues and progress, the Centre for Entomological Research and Insecticide Technology (CERIT) is organising a full day symposium on termite management. It is intended to bring participants up to speed on the latest tools for termite management well as to provide a forum for information exchange and networking. More details in the next issue. but if you would like information about the symposium and registration details to be sent directly to you, please contact CERIT.

For Further Information:
CERIT, Biological Science
University of New South Wales
SYDNEY NSW 2052
Phone: (02) 9385 0344
Fax: (02) 9385 0346
email: cerit@unsw.edu.au

Conference on BIOLOGICAL INFORMATICS

6-8 July 1998
Becker House (The Dome)
Gordon Street, Acton,
Canberra, ACT, Australia
Australian Academy of Science

This conference will provide all interested parties, primarily Australian industry and science, with a cutting-edge overview of the rapidly developing field of biological informatics (including bioinformatics). A comprehensive selection of leading international and Australian speakers will present both background information and the most recent developments in this important and rapidly developing field.

Biological informatics integrates biological, computational, networking, and organisational research and is concerned with the development, sharing and analysis of biological datasets, which are usually very large and complex. Examples of such datasets include results from the Human Genome Project, from research in biotechnology and medicine (including pharmaceuticals and neurobiology) and from environmental research such as biodiversity and ecosystem ecology.

Among the most important commodities in coming decades will be information and this relies on advanced information technology. Biological informatics is an area in which new jobs, financial opportunities and scientific developments will arise in the future. Biological informatics is one of the most important fields in information technology and so important that the OECD Megascience Forum has constituted a Working Group to address issues that are unique to this information domain. The Chair of the Working Group, Dr **James Edwards**, will speak at the meeting.

The program draws together world and Australian leaders in biological informatics. Conference sessions will include:

Setting the Scene: Overview of Biological Informatics
Biodiversity Informatics
Environmental Informatics
Molecular Informatics
Medical/Neuroinformatics
Teaching and Training in Informatics
and a closing Panel Discussion.

There will also be a trade show and poster session.

Speakers from overseas will include Dr **Robert Robbins** of the Fred Hutchinson Cancer Research Institute in Seattle, who is a world renowned communicator in informatics; Dr **Thomas Lovejoy** of the Smithsonian Institution, Dr **Abraham Silberschatz** of the Information Science Research Centre of Lucent Technologies; Dr **Takashi Gojobori** of the National Institute of Genetics, Japan; Dr **Michael Ashburner**, European Bioinformatics Institute, Cambridge and Dr **Stephen Koslow**, US National Institute of Health.

The registration fee, including lunches and refreshments, for the three days is $450; a number of student registrations are available at $350. Seats are limited, so an early registration is recommended.

The draft program is available on the Australian Academy of Science's web site:
http://www.science.org.au.

Complete meeting information (draft program, registration papers, information about the trade displays and posters) will be available from:
Biological Informatics Conference,
Australian Convention & Travel Service
phone (02) 6257 3299,
fax (02) 6257 3256
(those dialling from outside Australia should delete the leading 0 and add the country code (61)
e-mail: conf@acts.ccmail.compuserve.com

7th Australasian Conference on Grassland Invertebrate Ecology Perth, Western Australia September 1999

The Australasian Conference on Grassland Invertebrate Ecology is held alternately in Australia and New Zealand. It has proven to be a major forum for interaction between Australian and New Zealand scientists researching the biology, ecology and management of both pest and beneficial invertebrates in grassland ecosystems. These systems include native grasslands, exotic pastures, pasture/crop rotational systems and managed turf.

Planning has commenced to hold the seventh conference in this series in, or near, Perth, Western Australia during the week 27 September – 1 October 1999. This will be the first time that it has been held in Perth.

It is anticipated that the conference will be held over about three days in the middle to latter part of that week. The theme of the conference is: Ecologically sound management in grassland ecosystems.

A first circular was issued in April 1998.

For further information please contact the convenor of the organising committee:
John Matthiessen
CSIRO Entomology
Private Bag PO
Wembley
Western Australia 6014
Phone: 08 9333 6641
Fax: 08 9333 6646
E-mail: johnm@ccmar.csiro.au
Information also available at:
http://www.agric.wa.gov.au:7000/Ento/ACGIE/

XIII International Congress of IUSSI International Union for the Study of Social Insects

29 December 1998 - 4 January 1999
University of Adelaide

Congress President: Prof. Ross H. Crozier
Congress Secretary: Dr Michael P. Schwarz
Congress Treasurer: Dr Ben Oldroyd
Congress Coordinators: Dr Katja Hogendoorn and Tania Neville

Further information:

Dr Michael P. Schwarz
Biological Sciences
The Flinders University of South Australia
Phone: 61 8 8201 3729
Fax: 61 8 8201 3015
Email: Michael.Schwarz@flinders.edu.au
Web site:
http://www.bio.flinders.edu.au:80/iussi/home.htm

Workshop of SEARS/IOBC Working Group on Greenhouse/Protected Crops IPM "Natural Enemy to Biological Control Agent: Evaluating the Process" 25-28th January 1999 Sydney, Australia

The workshop is primarily for researchers and IPM practitioners who are active in the field of protected crops. Symposia topics include:

1. Surveying for Natural Enemies,
2. Importing Natural Enemies-Regulatory and Environmental Issues
3. Developing Rearing Methods - Small and Large Scale
4. Quality Control in Research Cultures and in Commercial Production
5. Selection Criteria for Evaluating Efficacy and Potential of Native Natural Enemies in the Laboratory and Field
6. Marketing and Distributing New Biological Control Agents and Fitting Biological Control Agents into an IPM Program.

Registration is available from now until 1 September 1998. The deadline for abstracts is 1 July 1998. For more information, please contact:

Dr. S. Goodwin
Horticultural Research & Advisory Station
NSW Agriculture
PO Box 581
Gosford NSW 2250 Australia
Phone: 61-2-43481929
Fax: 61-2-43481910
E-mail: stephen.goodwin@agric.nsw.gov.au

For further information, check the website for the SEARS/IOBC Working group on Greenhouse/Protected Crops IPM at:
http://www.dpi.qld.gov.au/iobc

AUSTRALIAN ENTOMOLOGICAL SOCIETY
29 AGM and Scientific Conference

26 - 29 September 1998
The University of Queensland, Brisbane

The 29th AGM and Scientific Conference of the Australian Entomological Society will be held at The University of Queensland, Brisbane from Saturday 26 to Tuesday 29 September 1998. The meeting will immediately precede the 6th Australasian Applied Entomological Research Conference also to be held at the University.

The program for the AES conference will complement that of the applied conference. The Organising Committees are working together to ensure that the combined programs provide a comprehensive coverage of current trends and research in all or most fields of entomology. At the same time the committees are conscious of time restraints on conference participants and so each will provide a 'stand alone' program. This will give participants the option of attending one or both conferences. Participants will be able to apply for one or both conferences on a single form.

The Conference is being organised through the Institute of Continuing and TESOL Education (ICTE) at the University of Queensland. Please contact Sally Brown at the address below for general enquiries.

Sally Brown,
Institute of Continuing and TESOL Education (ICTE),
University of Queensland, Brisbane Q 4072.
Telephone: 07 33656360
International telephone: +61 7 33656360
Facsimile: 07 33657099
E-mail: sally.brown@mailbox.uq.edu.au

Scientific Program

The Society conference program will include three mini symposia plus sessions for contributed papers on insect and arachnid systematics and

other papers that do not fit easily into the designated symposia sessions.

Symposia and Session Coordinators
Scientific Program Convenor:
Lindsay Barton Browne
Medical Entomology
Des Foley
ph: 07 3365 1358
d.foley@mailbox.uq.edu.au
Forestry Entomology
Judy King
ph: 07 3896 9447
king@qfslab.ind.dpi.qld.gov.au
Insect Movement
Tony Clarke
ph: 07 3365 7918
t.withers@ctpm.uq.edu.au
Systematics and software
Chris Burwell
ph: 07 3840 7703
chrisb@qm.qld.gov.au

Web Page
For more details see the Conference web page at: http://www.uq.oz.au/entomology/entsoc/entoconf.html

Margaret A. SCHNEIDER
Department of Entomology
The University of Queensland

Sixth Australasian Applied Entomological Research Conference
'Pest management - future challenges'
29 September - 2 October 1998
The University of Queensland
Brisbane, AUSTRALIA
in conjunction with
Australian Entomological Society 1998
Conference and 29th AGM
26 - 29 September 1998
Details: *Myrmecia* **33**(3): 29-32
via the AAERC homepage at:
http://www.ctpm.uq.edu.au/Education/AppliedEnto.html
or contact:
Sally Brown
ICTE Conferences
The University of Queensland
Brisbane QLD 4072 AUSTRALIA
ph: (+61 7) 3365 6360
fax: (+61 7) 3365 7099
Email: sally.brown@mailbox.uq.edu.au

Xth INTERNATIONAL CONGRESS OF ACAROLOGY

6-10 July 1998
Canberra, Australia
Further Information:
Dr Bruce Halliday
Principal Research Scientist (Acarology)
CSIRO Division of Entomology
GPO Box 1700
CANBERRA ACT 2601
AUSTRALIA
Phone: (06) 246 4911
Fax: (06) 246 4000
Email: bruceh@ento.csiro.au

XIVth INTERNATIONAL PLANT PROTECTION CONGRESS

Plant Protection Towards the Third Millennium
Where Chemistry Meets Ecology
Jerusalem, ISRAEL
July 25-30 1999
Details: *Myrmecia* **33**(2): 24-25
Contact:
Congress Secretariat
XIVth International Plant Protection Congress
PO Box 50006
Tel Aviv 61500
ISRAEL
Telephone: +972 3 514 0000
Fax: +972 3 514 0077 or 517 5674
Email: IPPC@Kenes.com

The Australian Society for Microbiology Inc.
1998 Annual Scientific Meeting & Exhibition
"MICROBES TO THE MAX"
27 September - 2 October 1998
Wrest Point Hotel Casino
HOBART TAS 7000

For more information please contact:
ASM Secretariat
Unit 23, 20 Commercial Road
Melbourne VIC 3004
Australia
Ph: 03 9867 8699
Fax: 03 9867 8722
Email: ASMConference@clari.net.au
Website: http://www.vicnet.net.au/~asm

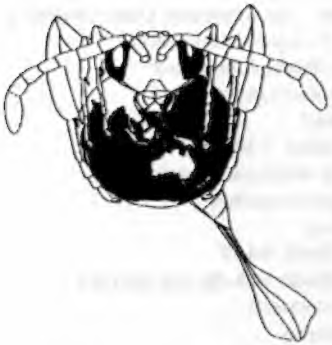
XXI International Congress of Entomology
Iguassu Falls, Brazil
20-26 August 2000
Entomologists Preserving Biodiversity
Details: *Myrmecia* **34**(1): 30-31.

We are pleased to inform we have received several suggestions of symposia for the scientific sessions of the XXI ICE. We will still be open for suggestions up to the end of next June, when the sessions convenors will start to define which symposia will compose each session. And, next July we will open for suggestions for the XXI ICE Plenary Lectures, so start also thinking about that.

Decio GAZZONI
President
XXI International Congress of Entomology

Everything you could possibly want to know about the next ICE is available on the Congress Web Page **http://www.embrapa.br/ice**, including details of accommodation, delegates, services, associated activities, administrative matters, sponsors, symposia, etc.

Fourth Conference of the International Society of Hymenopterists.



Canberra, AUSTRALIA
6-11 January 1999
Details: *Myrmecia* **32**(1): 28
The Conference address and contact is:
4th Conference of the International Society of Hymenopterists,
c/o CSIRO, Division of Entomology,
P.O. Box 1700
Canberra, ACT 2601
AUSTRALIA
fax: 61-6-246.4264

New Email address: ishcon99@ento.csiro.au
The Conference now also has a web page:
http://iris.biosci.ohio-state.edu/ish/conf1999.html

NEW PUBLICATIONS

World Catalogue of the Spider Mite Family (Acari: Tetranychidae) with references to Taxonomy, Synonymy, Host Plants and Distribution

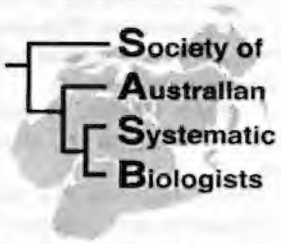
by Hans R. Bolland, Carlos H.W. Flechtmann and Jean Gutierrez.
BRILL, May 1998, c.384pp.
Approx. price $A187.
ISBN 90-04-11087-9

Tetranychid mites include some of the world's most severe agricultural mite pests affecting a wide range of crops throughout the world. Recent discovery of a tetranychid damaging date palms in Central Australia highlighted the dearth of ready information about this mite family. This catalogue

collects together information on all 1189 described tetranychids, including synonyms, host ranges and geographical distributions and is the first comprehensive treatment of the family since Pritchard and Baker (1955). Indices cover 1277 references, a species list, a host plant list including 3600 host names and list of localities. The book is intended for use by researchers and students and will be a boon for plant protection and quarantine authorities. The book is available from DA Books, Mitcham Victoria - service@dadirect.com.au

NOTICES

SOCIETY OF AUSTRALIAN SYSTEMATIC BIOLOGISTS



The Councils of the SASB and Australian Systematic Botany Society (ASBS), as well as a general forum held at last year's Invertebrate Biodiversity and Conservation Conference, have all agreed to a joint conference of the three groups being held in Perth in December 1999. A preliminary organising committee has been formed and comprises people from several WA organisations, including Alex George, Jenny Chappill, Pierre Horwitz, Bill Humphreys, Diana Jones, Brendan Lepski, Jonathan Majer, Erich Volschenk and Mark Harvey. They have met recently to discuss venues and conference themes and further information will be forthcoming later in the year. So keep your calendar free for the last conference of the 1900's (or of the century?).

SASB Council submitted a response to the evaluation of ABRS that occurred in November 1997. For those of you who are interested the response is up on the Society's web site. Since then, we know that the evaluation committee has submitted its report and recommendations to the Minister for the Environment, Senator Hill, but the document has not been made public and the Minister has made no announcement regarding the future funding of ABRS. Related to this, many of you will have received a letter from ABRS some weeks ago informing people that the call for applications for funding under the ABRS Participatory Program will be delayed pending the outcome of the evaluation.

At the Society meeting in Adelaide last year, the Council was charged with developing a draft constitution as a top priority and exploring means by which we can become incorporated. Mark Harvey took on the job of preparing the draft constitution, which is currently being assessed by members. The issue of incorporating the Society turns out to be slightly more problematic for a number of reasons. None are insurmountable but they need to be examined carefully, and for this reason I suggest we proceed with finalising our constitution in the next few weeks, and deal with incorporation later in the year. For instance, one small problem is that incorporation invokes annual fees - they are not large but would need to be covered by membership fees (which we do not yet have).

Details about the Society can be found on the Society's Home page:
http://www.science.uts.edu.au/sasb/

CSIRO JOURNALS CONCESSIONAL PRICES

Any member who is <u>not</u> getting CSIRO journals at concessional prices and who would like to, please contact:

Tracey Lockwood
Subscriptions Officer
CSIRO Publishing
PO Box 1139
Collingwood Vic 3066
Phone: 1800 626 420
Fax: 03 9662 7555
Email: info@publish.csiro.au

1998 LISTING OF POSTGRADUATE PROJECTS IN ENTOMOLOGY An Australian Survey: PART 1

Introduction

This is Part 1 of the list of 1998 Postgraduate projects in Australian Entomology. A similar survey was last published in two parts in the May and August 1996 issues of *Myrmecia*. The current list comprises 159 projects in entomology. Special thanks to Alan Andersen, Françoise Berlandier, Fiona Clissold, Nancy Endersby, Geoff Gurr, Owen Seeman and Cameron Webb who co-ordinated the collection of data, and to everyone else who contributed (their names appear in brackets before the entries).

You may note that there are many University departments and other institutions not represented below. If your research group is not listed, please contact your Regional Councillor, or submit material directly to me, so that your projects can be included in Part 2. Contact details appear on the back cover of *Myrmecia*.

Gary TAYLOR

NEW SOUTH WALES

(Cameron Webb, Regional Councillor)

THE UNIVERSITY OF SYDNEY

Department of Medical Entomology, Medicine
(Assoc. Prof. Richard Russell)

COOPER, R. (PhD) Identification and distribution of anopheline mosquitoes in Northern Australia and Papua New Guinea.

DOGGETT, S. (PhD) Vector competence of mosquitoes with Barmah Forest virus.

WEBB, C.E. (PhD) The ecology of arbovirus vectors associated with the saline wetlands of Homebush Bay, NSW.

WILLEMS, K.J. (Masters) Investigations of the ecology and control of pest mosquitoes in freshwater marshes at Homebush Bay.

Orange Agricultural College
(Dr Geoff Gurr)

HOSSAIN, Zamir (PhD) Habitat manipulation for lucerne pests: strip-cutting to enhance biological control.

VICTORIA

(Fiona Clissold and Nancy Endersby, Regional Councillors)

MONASH UNIVERSITY

Department of Biological Sciences, Cooperative Research Centre for Freshwater Ecology

BUTCHER, R. (PhD) Assessing biodiversity in temporary and permanent wetlands.

FINLAY, K. (PhD) Systematics of south-eastern Australian Leptophlebiidae (Ephemeroptera).

LLOYD, N. (PhD) Scales of spatial autocorrelation in benthic stream invertebrates.

THOMSON, J. (PhD) Effects of disturbance on predator-prey interactions in stream benthic communities.

TSYRLIN, E. (PhD) Taxonomy of two genera of stoneflies *Riekoperla* and *Leptoperla*.

Department of Biological Sciences

CLISSOLD, F. (PhD) A grazing interaction: Australian plague locusts and mitchell grasslands.

FERNANDO, C. (MSc) Oviposition behaviour of the potato moth (*Phthorimaea operculella*) & its parasitoid wasp (*Copidosoma koehleri*) in the tritrophic system.

HOSKING, A. (MSc) Ants, disturbance and regeneration in Victorian mountain ash forests.

PEETERS, P.J. (PhD) The influence of leaf structure on the herbivorous insects of an Australian forest understorey.

Department of Biological Sciences (Genetics)

BAXTER, S. (Hons) A temporal expression study of the *Drosophila* heat shock gene hsr-omega following a heat stress.

LA TROBE UNIVERSITY

Department of Genetics
(Prof Ary Hoffmann)

BENNETT, D. (PhD) Developing quality control indices and maintaining quality of *Trichogramma*

in mass release programs.

HERCUS, M. (PhD) Using endemic *Drosophila* species to test the evolutionary potential of hybrid populations.

JENKINS, N. (PhD) Population biology of *Drosophila serrata*, particularly in relation to the southern border of this species.

KOVACS, I. (PhD) Genetics of migration in *Helicoverpa* populations.

MAGIOFOGLOU, A. (PhD) Testing evolutionary hypotheses about species borders in *Drosophila serrata* and *D. birchii* using field transplant experiments.

REYNOLDS, T. (Hons) Isolating strains of *Trichogramma* for the control of pest moths in apple orchards.

ROBINSON, M. (PhD) Determining the pest status of species in the parthenogenic blue oat mite complex and testing evolutionary hypotheses about factors maintaining clonal diversity in parthenogens.

THOMSON, L. (PhD) Integrating *Trichogramma* wasp releases into an overall control strategy for lightbrown apple moth in grapevines.

UMINA, P. (Hons) Identifying the reasons for failures in the chemical control of earth mites.

WEEKS, A. (PhD) Genetic and ecological studies of earth mites in southeastern Australia.

WOODS, R. (PhD) Examining the nature of associations between developmental instability and extreme stress in *Drosophila* populations.

Department of Genetics & Human Variation
(Prof Ross H Crozier)

FRASER, V. (PhD) Genetic correlates of caste in ants.

JOHNSON, R. (PhD) Molecular population genetics and phylogeny of weaver ants, especially in the genus *Polyrachis*.

RAFIUDDIN NUGRAHA, Rika (PhD to arrive mid-year) A molecular genetic analysis of the honeybee dance language.

TAY, W Tek (PhD) Molecular population genetics and social structure of an arid-zone queenless ant, *Rhytidoponera* sp 12.

THOMPSON, G. (PhD) Molecular phylogeny of the termite family Kalotermitidae.

School of Zoology
(Dr Tim New)

DRAGE, A. (Hons) Bias and variance in aspects of the methodology and analysis of pitfall trapping of surface-active ant communities.

EDWARDS, M. (PhD) Aspects of the biology and control of Fullers Rose Weevil in citrus.

HINKLEY, S. (Msc) Ecology of ground-dwelling invertebrates.

KENTJONOWATI, Endang Sri (PhD) Systematics and Biogeography of Indonesian Psocoptera.

MAHON, E. (Hons) (to be advised).

MANSFIELD, C. (MSc) The population, dynamics, distribution and host finding of *Phthorimaea operculella* (Zeller) in commercial potato crops in Victoria.

MITCHELL, B. (Hons) Interspecific competition between two common species of Psyllid (Homoptera: Psyllidae).

NAKMUL, Nismah (PhD) Psyllid ecology.

NEVILLE, P. (PhD) Fire ecology of ground-dwelling invertebrates.

PHRAPHONE, L. (Hons) Ants and other ground dwelling arthropods of the Eltham copper butterfly reserves, and the association of *Notoncus* ants with the butterfly.

SUBCHAN, Wachju (PhD) Competition between *Cardiaspina albitextura* and *Glycaspis*.

SYMINGTON, C. (PhD) The relative effects of synthetic pesticides on pest and beneficial insects of potato crops in Victoria, Australia.

TRAICEVSKVI, V. (PhD) Aspects of the behavioural ecology of the cowpea aphid *Aphis craccivora*.

WARD, D. (MSc) Beetles: indicators and predictors of the environment.

WARD, J. (Hons) The diet of Anisopteran larvae in fish hatchery ponds and their effects on fish survival.

UNIVERSITY OF MELBOURNE

Genetics Department
(Dr Jon Martin)

CORCORAN, B. (Hons.) Phylogenetic relationships of disjunct populations of the chironomid *Archaeochlus*.

DABORN, P. (PhD) Mechanisms of resistance to cyromazine.

FREEBAIRN, K. (PhD) Coadaptation of the diazinon resistance system in *Lucilia cuprina*.

HUMPHREY, S. (MSc) Molecular genetics of insecticide resistance in the Australian sheep

blowfly, *L. cuprina*.

INDRASAMY, H. (PhD) Study of the genetic and environmental basis of asymmetry.

MAGOC, L. (MSc) The evolution of insecticide resistance.

OON, H. (Postgraduate Diploma of Genetics) Molecular genetic studies of the lozenge locus.

PYKE, F. (PhD) The genetic basis of diazinon resistance in *Drosophila melanogaster*.

SCOTT, M. (MSc) Insecticide resistance.

SIDDALL, N. (Hons) The genetic and molecular basis of insecticide resistance in natural populations of *Lucilia cuprina*.

SMITH, M. (PhD) Molecular and cellular biology of the *Drosophila melanogaster* stoned locus.

WILLIAMS, A. (PhD) cAMP and the regulation of the stoned gene of *D. melanogaster*.

QUEENSLAND

UNIVERSITY OF QUEENSLAND

Department Of Entomology
(Mr Owen Seeman)

ACDA, M. (MSc) Phosphine resistance in strains of *Rhyzopertha dominica* (Fabricius) (Coleoptera: Bostrichidae) from the Philippines.

ALUGADDA, S. (MSc) Courtship and mating behaviour of *Trichogramma australicum* Girault (Hymenoptera: Trichogrammatidae): Progeny sex ratio and modalities of male-female attraction.

AMORNSAK, W. (PhD) Host discrimination and superparasitism behaviours by the lepidopteran egg parasitoids *Trichogramma australicum* Girault (Hymenoptera: Trichogrammatidae) on the cotton bollworm, *Heliothis armigera* Hübner (Lepidoptera : Noctuidae).

AZAM, G. (PhD) Invasion and colonisation of native habitats by exotic mites.

BEARD, J. (PhD) Native acarine thrips biological control agents.

BRIER, H. (MAgrSc) Soybean tolerance to bug attack.

BROUGHTON, S. (PhD) The effect of leaf insects on *Lantana*.

CATESBY, S. (PhD) Soil fauna as indicators of the impact of forest management and subsequent ecosystem recovery in native forests.

CEBALLO, F. (PhD) An investigation into why *Coccidoxenoides peregrinus* (Timberlake) is not effective in biological control in Queensland citrus.

CHOO, J. (Hons) Eggs size and parasitism in water mites: evolutionary and ecological correlates.

CHRISTENSEN, J. (Hons) Systematics of Australian Bostrichidae (Coleoptera).

CORCORAN, R. (PhD) Physiological and behavioural effects of heat in fruit flies of the family Tephritidae.

DAHLAN, A. (PhD) Larval anatomy, development and the determination of nutritional requirement of *Trichogramma* spp. in vitro.

DELING, M. (PhD) Biological effects and utilisation strategies of neem derivatives on cotton bollworm, *Helicoverpa armigera* Hübner (Lepidoptera: Noctuidae).

DILLON, M. (MSc) Generic algorithms for modelling insect population movement

GIBB, D. (MAgrSc) Monitoring plant responses to early insect damage and its effects on cotton production.

GREEN, J. (PhD) The ecological role of spiders in a citrus agro-ecosystem.

HUANG, K. (PhD) Studies on egg-recognition kairomones for *Trichogramma australicum* Girault (Hymenoptera: Trichogrammatidae), an egg-parasitoid of *Helicoverpa armigera*.

HULL, C. (PhD) The olfaction of the Queensland fruit fly, *Bactrocera tryoni* (Froggatt).

KUNIATA, L. (PhD) The management of *Sesamia grisescens* Walker (Lepidoptera: Noctuidae), a sugarcane stem borer in Papua New Guinea.

LAMBKIN, C. (PhD) Revision of the genus *Exoprosopa* Macquart in Australia (Diptera: Bombyliidae).

LOCH, A. (PhD) Alternative hosts in the ecology of *Trissolcus basalis* (Wollaston) (Hymenoptera: Scelionidae): implications for biological control of green vegetable bug in south-eastern Queensland.

LOGAN, D. (PhD) Studies on the biology of negatoria and Childers canegrubs as a basis for development of improved controls.

MAROHASY, J. (PhD) The host plant relationships of *Phenacoccus parvus* Morrison - with particular reference to host specificity testing for weed biocontrol.

McDOWELL, A. (Hons) Aspects of sound communication in *Nezara viridula* (Linnaeus).

MILLER, L. (PhD) Accurate identification of canegrub pests.

MILSTEIN, T. (PhD) Population dynamics of the root-knot nematode (*Meloidogyne* sp.): Early establishment of plant infestation.

MONSOUR, C. (PhD) Optimisation of *Bacillus thuringiensis* (Bt) usage in the IPM of *Heliothis*.

MUDA, R. (PhD) An investigation into the biological activity of azadirachtin against *Rhizopertha dominica* F. (Coleoptera: Bostrichidae) in grain storage.

NAHRUNG, H. (Hons) Factors affecting the embryonic diapause of *Homichloda barkeri* (Jacoby) (Coleoptera: Chrysomelidae).

NGERNSIRI, L. (PhD) Genetics study in *Trichogramma*.

NURINDAH (PhD) Study on oviposition behaviour of egg parasitoid for *in vitro* rearing.

OSMAN, M.S. (PhD) Physiological and biochemical changes in fruit flies subjected to thermal disinfestation of fruits for quarantine security.

PALMER, C. (PhD) Systematics of the tribe Pterostichini (Coleoptera: Carabidae).

PARKES, G. (Hons) Informational requirements for mass-rearing parasitoids for biological control programs: the example of *Coccophagus gurneyi*.

PANGNAKORN, U. (PhD) *In vitro* production of biopesticides from neem trees, *Azadirachta indica* (A. Juss.).

PETERS, B. (MAgrSc) Aspects of integrated subterranean termite management in Queensland.

POWER, N. (Hons) Temporal and spatial diversity of Therevidae in south-east Queensland.

QUIMIO, G. (PhD) Mating behaviour as an aid to species studies in the fruitfly parasitoid *Biosteres arisanus* (Sonan) (Hymenoptera: Braconidae).

ROCHESTER, W. (PhD) Forecasting spring migrations of *Helicoverpa punctigera* and *H. armigera* from inland Australia to summer cropping areas of eastern Australia.

SCHNEIDER, M. (PhD) A systematic study of Australian Conopidae (Insecta: Diptera).

SCHOLZ, B. (PhD) Consumer choice by egg parasitoids: Odours and host location.

SEEMAN, O. (PhD) Evolutionary relationships of mites associated with beetles inhabiting dead wood.

SEXTON, S. (MAgrSc) A theoretical and field study of codling moth control using a mating disruption system.

SIRIWARDANA, K. (MAgrSc) An analysis of chemical communication as a means of understanding species status of green vegetable bug populations, *Nezara viridula* (Hemiptera: Pentatomidae).

SKEVINGTON, J. (PhD) Systematics of Australian *Eudorylas* Aczél (Diptera: Pipunculidae).

SPARKS, D. (MSc) Biological control of fireweed: a pre-release study.

SPOLC, D. (PhD) A virtual model of the growth habits of red cedar (*Toona australis*) and their modification by tip moth (*Hypsipyla robusta*) attack.

STANAWAY, M. (PhD) Factors affecting the success of insect pest establishment.

VAN DEN HURK, A. (MSc) Population dynamics of *Anopheles farauti sensu lato* in Far North Queensland.

WINTERTON, S. (PhD) Systematics of the Agapophytini (Diptera: Therevidae).

WONG, D. (Hons) Study of homeotic genes and the sensory system in *Drosophila* embryos.

SOUTH AUSTRALIA

(Dr Gary Taylor, Regional Councillor)

THE UNIVERSITY OF ADELAIDE

Waite Campus
Department Of Crop Protection

AHMAD, Mahmood (PhD) Evolution of resistance to *Bacillus thuringiensis* in *Plutella xylostella* (Lepidoptera: Plutellidae).

BAKER, Jeanine (PhD) Population genetics of colonisation of the horehound plume moth.

BALL, Steven (PhD) The effect of habitat patch isolation on metapopulation dynamics: An empirical study using *Drosophila melanogaster*.

BECK, Markus (PhD) Molecular cloning and characterisation of genes coding for virus-like-particle proteins in *Venturia canescens*.

CLARKE, Craig (PhD) Climate matching in the colonisation of biological control agents against boneseed and bitou bush.

FERGUSON, Kaye (PhD) Biology, ecology and management of quandong moth.

HAWTHORN-JACKSON, Dawn (Hons) Reproductive behavioural ecology of horehound by the plume moth, *Pterophorus spilodactylus*.

HILL, Catherine (PhD) The mode of action of *Bacillus thuringiensis* against the sheep louse, *Bovicola ovis*.

IQBAL, Muhammad (PhD) Systematics and biology of Baeini (Hymenoptera: Scelionidae).

JACKMAN, Darryl (PhD) Biology and ecology of Kelly's citrus thrips, *Pezothrips kellyanus*.

JENNINGS, John (PhD) The systematics and biogeography of the Australian Hyptiogastrine wasps (Hymenoptera: Gasteruptiidae).

MADDEN, Chris (PhD) The use of morphological deformities in chironomid larvae as an indicator of pesticide and heavy metal pollution in water catchment areas of South Australia.

MAYO, Gwen (PhD) Genetic variation in St. John's Wort and resistance to *Aculus* mites.

SALEHI, Latif (PhD) An investigation of the efficiency of two parasitoids of potato moth, *Apanteles subandinus* and *Orgillus lepidus*.

SIEKMANN, Gitta (PhD) Foraging behaviour of the parasitic wasp *Cotesia rubecula*.

TAVERNER, Peter (MAgSc) Physiological effects of post-harvest oils on citrus pests.

WANG, Xin-geng (PhD) Patch time allocation by *Cotesia plutellae* and *Diadegma semiclausum*, the two major larval parasitoids of diamondback moth, *Plutella xylostella*.

WHITELY, Sarah (Hons) Ethyl formate fumigation for the disinfestation of table grapes.

Department of Horticulture, Viticulture and Oenology

KELLOW, Alison (PhD) Grapevine Phylloxera interactions: Mechanisms for resistance.

Roseworthy Campus

Department of Environment and Management

FISHER, Fiona (Hons) Shelterbelts and epigaeic invertebrate biodiversity.

LEWIS, Graham (Hons) Development of a sampling protocol for assessing invertebrate biodiversity.

FLINDERS UNIVERSITY

School Of Biological Sciences

(Brenda Kranz)

BULL, Nicholas (PhD) Conflict and cooperation in the allodapine bee, *Exoneura bicolor*.

CRONIN, Adam (PhD) Ecological factors influencing social organisation in Australian allodapine bees along the Australian eastern seaboard.

EVANS, Richard (Hons) Fluctuating asymmetry and its relationship to ploidy in the Australian native bee, *Exoneura bicolor*.

HURST, Pam (PhD) Social organisation in the highly eusocial allodapine bee, *Exoneurella tridentata*.

KRANZ, Brenda (PhD) Inbreeding, sex allocation and the evolution of social behaviour in Australian gall-forming thrips (Thysanoptera: Phlaeothripidae) on acacias.

LEIJS, Remko (PhD) Phylogeny and social evolution in the carpenter bees, tribe Xylocopini.

MORRIS, David (Hons) Phylogeny of Australian gall-forming thrips and their allies (Thysanoptera: Phlaeothripidae).

STEEN, Zeta (PhD) Ecology and behaviour of the Australian green carpenter bee, *Lestis aeratus*.

WATINIASIH, Ni Luh (PhD) Ecology and social behaviour of the xeric allodapine bee, *Exoneurella eremophila*.

ZAMMIT, John (PhD) Extrinsic factors and social systems: a comparative approach using phylogenetic regression.

THE UNIVERSITY OF SOUTH AUSTRALIA

School of Pharmacy and Medical Sciences

Mosquito Research Group

(Dr Michael Kokkinn)

DOWNES, E. (B.Sc. Hons) Humidity and roosting sites in *Culex annulirostris* and *Aedes vigilaz*.

FESSAS, Terry (B.Sc. Hons) Oviposition behaviour in *Culex quinquefasciatus*

HEDDLE, C. (B.Sc. Hons) Nectar feeding in *Culex annulirostris*

KENT, Jo-Anne (PhD) Chemotaxonomy of *Culex annulirostris*

WILLIAMS, Craig (PhD) The genetics of host-seeking behaviour in *Culex annulirostris*

WESTERN AUSTRALIA

UNIVERSITY OF WESTERN AUSTRALIA

Department of Zoology

(Assoc. Prof. Win Bailey)

HALE, Rod (PhD) nest site recognition and homing behaviour of the gryllacridid, *Hadrogryllacris* sp.

PAINI, Dean (PhD) Impact of *Apis mellifera* on conservation values in Western Australia.

ANNELLS, Amanda (PhD) The mating behaviour and reproductive biology of redlegged earth mites.

WALDEN, Kevin (PhD) Ecology of native budworm (*Helicoverpa punctigera*) in Western Australia.
SUMMERS, Andrew (MSc) The biology of the whistling moths *Hecatesia thyridion* and *H. exultans* in Western Australia.

CURTIN UNIVERSITY OF TECHNOLOGY

School of Environmental Biology
(Assoc. Prof. Jon Majer)

ASHBY, Lachlan (Hons) The successional response of spiders to prescribed burning in a Western Australian jarrah forest.
BISEVAC, Lubomir (PhD) Evaluation of invertebrates for the derivation of completion criteria in minesite rehabilitation.
BRENNAN, Carl (PhD) Successional response of spider communities to the multiple disturbances of bauxite mining and fire in the jarrah forests of Western Australia.
BROWN, Elisabeth (PhD) Pollination and seed viability in revegetated and remnant areas in Western Australia.
LADHAMS, Elisha (Hons) The influence of fire regime on litter and selected litter invertebrates within Kings Park bushland, Perth, Western Australia.
VOLSCHENK, Erich (PhD) Systematics and biogeography of *Lychas* scorpions in Australia.

NORTHERN TERRITORY

NORTHERN TERRITORY UNIVERSITY
(Dr Alan Andersen)

HOFFMANN, B. (PhD) Land-use impacts on savanna ant communities.
SALVARANI, A. (PhD) Biogeographic patterns of savanna ant communities.

CALL FOR NOMINATION/ RENOMINATION OF OFFICERS & REGIONAL COUNCILLORS

All Offices will fall vacant at the Society's 29th AGM in September 1998. Nominations for election should be made on the form provided here and should reach the Secretary no later than 1 September 1998.

Vacant Office	Present Incumbent
President	Prof. R.L. Kitching

(Prof. Kitching has served his two year term and is not eligible for re-election)

(All other Executive positions are appointed for periods of two years and incumbents are eligible for re-election)

Vice President	Assoc. Prof. M.P. Zalucki
Secretary	Dr D.E. Walters
Treasurer	Ms V.A. Brancatini
Chief Editor	Dr P.G. Allsopp
Business Manager	Mr M. Jefferies
Public Officer	Dr I.D. Naumann
News Bulletin Editor	Dr M.J. Fletcher

Regional Councillors

(Regional Councillors are eligible for re-election for up to three years only - NSW, ACT and Victoria need a new Regional Councillor)

Queensland	Mr I.R. Kay
	Dr Tony Clarke
	Dr Jamie Seymour
New South Wales	*Mr J.H. Hawking
	Dr G.M. Gurr
	Mr Cameron Webb
Australian Capital Territory	Dr M. Matthews
	*Dr G.V. Maynard
Victoria	*Ms N.M. Endersby
	Ms F. Clissold
South Australia	Dr G.S. Taylor
	Dr P. Dangerfield
Tasmania	Dr J. Elek
Western Australia	Ms F.A. Berlandier
Northern Territory	Mr G. Bellis

*** not eligible for re-election**

Representative Councillors

(Representative Councillors are appointed by the affiliated Societies. There are no restrictions on terms served in this capacity)

Ento. Society of Queensland	Dr J. King
Ento. Society of NSW	Dr A.D. Clift
Ento. Society of Victoria	Mr R. MacPherson

Australian Entomological Society Inc.

NOMINATION OF OFFICER OR COUNCILLOR

I nominate . . . . . .

for election to the office of . . . . . .

. . . . . .

Name of nominator . . . . . .

Signature . . . . . .

Date . . . . . .

I second this nomination

Name of seconder . . . . . .

Signature . . . . . .

Date . . . . . .

I accept this nomination*

Signature . . . . . .

Date . . . . . .

* The nominee is requested to attach a typed statement, not exceeding 300 words, which includes the following: professional qualifications, address, institution, position held, fields of entomological interest, previous offices or appointments held in the Australian Entomological Society, any other information which may be of interest to members.

(A photocopy of this form may be used)

Please send all nominations to Dr David Evans Walter, Dept Entomology, The University of Queensland, St Lucia, Qld 4072 before **1 September 1998.**

Australian Entomological Society Inc.

APPOINTMENT OF PROXIES

I, ...

of . . . . . .

. . . . . .

being a member of the above-named Society,

hereby appoint . . . . . .

of . . . . . .

. . . . . .

as my proxy to vote for me on my behalf at the Council Meeting, Annual or Special General Meeting, as the case may be, of the Society, to be held during 26-29 September 1998, and at any adjournment thereof.

Signed this . . . . . .

day of . . . . . 19 . . .

Signature . . . . . .

(A photocopy of this form may be used)

INSECT ILLUSTRATION COMPETITION

The Australian Entomological Society invites previously unpublished and undisplayed entries to this competition to be judged and displayed at the Society's Annual Scientific Conference to be held in Brisbane 26-29 September 1998. Illustrations of an insect, arachnid or myriapod will be accepted.

Categories will be:

Colour Illustration
Black & White Illustration
Colour Photography
Black & White Photography (incl. SEM)

Maximum entries: three per person

Entries should be mounted and brought/delivered to the AGM in Brisbane.

Illustrations should not exceed 21 x 30 cm.

Photos should not exceed 20 x 25 cm.

EACH ENTRY MUST HAVE THE FOLLOWING INFORMATION ON THE BACK:

Name and Address of entrant
Category of entry
Title of the entry
Scientific Name of the organism illustrated (if known)

CALL FOR NOMINATIONS

FOR THE IAN MACKERRAS MEDAL FOR EXCELLENCE IN ENTOMOLOGY 1998

FINANCIAL MEMBERS OF THE SOCIETY WHO ARE UNDER 50 YEARS OF AGE AS OF SEPTEMBER 1998 MAY BE NOMINATED FOR CONSIDERATION FOR THE IAN MACKERRAS MEDAL FOR EXCELLENCE IN ENTOMOLOGY. NOMINATIONS, TO BE SENT TO THE SECRETARY, NEED TO BE MADE BY AT LEAST TWO FINANCIAL MEMBERS OF THE SOCIETY.

THE PRESIDENT AND FOUR SENIOR MEMBERS OF THE SOCIETY (EXCLUDING ANY NOMINEES OR NOMINATORS) WILL DECIDE ON THE AWARD, WHICH WOULD BE PRESENTED AT THE AGM IN SEPTEMBER.

Please send all nominations to:
Dr David Evans Walter
Hon. Secretary AES
Dept of Entomology
The University of Queensland
St Lucia, Qld 4072

before 1 September 1998.

THE AUSTRALIAN ENTOMOLOGICAL SOCIETY INC.

FORM OF NOMINATION FOR MEMBERSHIP

To be returned to:
Dr D.E. Walter, AES Secretary, c/o Dept. of Entomology
University of Queensland, QLD 4072

We the undersigned

Proposer: . . . . . (print name here) . . . . . (signature)

Seconder: . . . . . (print name here) . . . . . (signature)

being financial members of the Society, propose the following for membership of The Australian Entomological Society Inc.:

Title . . Initials . . Given Name . . . . . Family Name . . . . . .

of (Address): . . . . . .

. . . . . .

Tel: . . . . . Fax: . . . . . .

Email: . . . . . Degrees, etc: . . . . . .

Occupation or Appointment: . . . . . .

Interests, experience, and publications in entomology for publication in the News Bulletin *Myrmecia* (please attach brief resumé):

I accept nomination and undertake if elected to abide by the rules of the Society, and to pay annual subscriptions by the date prescribed.

Signature: . . . . . **Date:** . . . . . .

For **1998**, new student/retired members - $25.00; new full members - $55.00. **Payment with nomination required.** (NB. These rates only apply for new memberships.

. . . . . .

(EXECUTIVE USE ONLY)

Nom. received: . . . . . Nom. considered at meeting: . . . . . .

Payment received: . . . . . Elected at meeting: . . . . . .

Membership type: . . . . . Applicant advised: . . . . . .

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Dr A.D. Clift
c/- Zoology Dept
University of Sydney NSW 2006

Entomological Society of Victoria
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